

TEST EQUIPMENT

World's Broadest Line of Stock Electrical, Electronic
and Environmental Test Instruments

Simpson®



Your Choice
DIGITAL AND ANALOG
TEST INSTRUMENTS
Immediate Delivery From Distributor Stock!



SIMPSON ELECTRIC COMPANY

A Katy Industries, Inc. Subsidiary

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2630 W. 2nd Ave.
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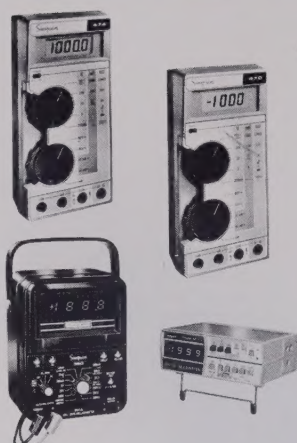
Simpson Panel Instruments Are
Featured in New Catalog 5400-P

1984 - OUR 50th ANNIVERSARY YEAR

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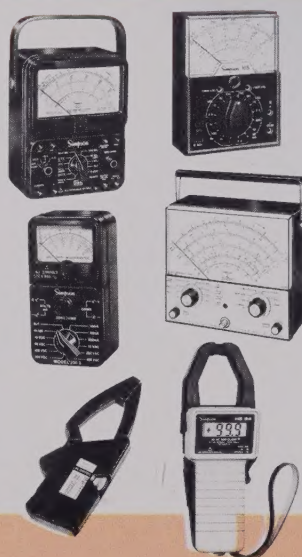
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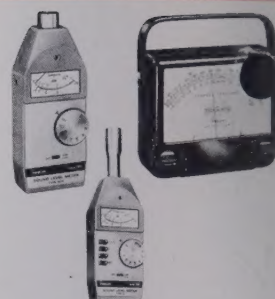
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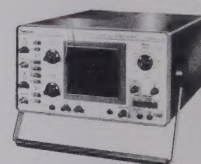
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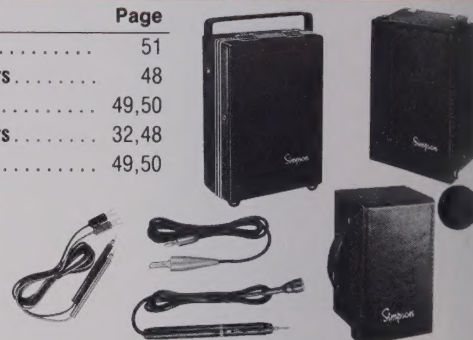
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About **Simpson Electric Company**

Established in 1934, Simpson Electric Company today enjoys a worldwide reputation as a leading manufacturer, offering industry's broadest line of analog and digital panel meters and test instruments for electrical, electronic and environmental testing and measurement applications.

Most Simpson analog and digital test instruments are made here in the U.S.A. with American labor, American parts and American raw materials. At Simpson, we export products, not jobs! All Simpson products are available from over 1500 electronics and electrical distributors worldwide.



Simpson Test Instruments

More than just good specs! Comparing functions, ranges and accuracies is important when you are selecting an electronic or electrical test instrument. But there's more to look for than just comparing manufacturers' specifications...

Reliability should be your first consideration when you look for a test instrument. Simpson test instruments are designed for use by professionals. They deliver more hours of dependable use, with less time spent for calibration or repair.

Simpson test instruments are built to last and to withstand tough day-to-day usage — with highest quality components, built-in electrical overload protection systems and rugged construction.

Only Simpson offers you a choice of over 30 digital and analog multimeters, safety tested by Underwriters Laboratories... and UL Listed under UL 1244, Standard for Safety — Electrical and Electronic Measuring and Testing Instruments. And only Simpson offers you a wide variety of UL Recognized accessory test leads, probes and clamp-on AC ammeters to assure the integrity of your Simpson (or other) test instrument.



Multiple Inspection

Simpson takes pride in delivering a quality product. Every Simpson test instrument undergoes multiple inspections during assembly to make certain that the instrument you get performs to specifications. Incoming parts are carefully examined and compared with specifications. Assembled circuit boards are "exercised" by modern automatic test equipment. Each instrument is calibrated by experienced technicians. Every digital test instrument is given a 100-hour burn-in. All instruments receive a final check of ranges and functions before shipment.



Simpson Warranty

Each Simpson analog test instrument is backed by a 90-day warranty against defects in materials and workmanship. Digital products have a one-year warranty.

Availability

Simpson instruments are available where and when you want them. Immediate delivery, off the shelf at leading electrical/electronics distributors worldwide. Service is also nearby, when necessary, from an authorized Service Center in your area. When you compare all the facts, you'll know Simpson will always be around with products and services to meet your needs.



New 4-1/2 Digit

Simpson 474™



- 10 μ V, .01 Ω and .1 μ A RESOLUTION
- 0.03% BASIC DC ACCURACY
- 10 AMP AC/DC CURRENT RANGES
- FULL MEASUREMENT CAPABILITY to 1000 V DC, 750 V AC, 20 M Ω , and AC/DC current to 10 A
- 6 kV TRANSIENT PROTECTION, 100 μ sec, on all volt and ohm ranges
- DOUBLE FUSING SYSTEM — low/high energy overload protection
- HIGH CONTRAST 0.4" LIQUID CRYSTAL DISPLAY
- WIDE TEMPERATURE/HUMIDITY OPERATING RANGE — up to +55°C at 70% humidity, up to 90% at +35°C
- AUDIBLE AND VISUAL CONTINUITY INDICATION
- DIODE TEST — for "good-bad" semiconductor junction checks
- TWO-WAY TILT STAND — for bench or hanging upright
- THUMBWHEEL KNOBS — for positive range and function selection
- SINGLE 9-VOLT BATTERY — approximately one-year life, average use. Automatic low-battery indication
- HIGH-IMPACT MOLDED ABS CASE — two-tone Brown or Gray
- UL RECOGNIZED TEST LEADS — with screw-on, insulated alligator clips

See accessories on page 5

SIMPSON 474™, complete with 9-volt battery, test leads with insulated screw-on alligator clips and instruction manual. 1-year warranty.

TWO-TONE BROWN COLOR, Cat. No. 12557 \$219.00

TWO-TONE GRAY COLOR, Cat. No. 12559 219.00

Low-Cost, Full Function
Hand Held DMM



Simpson 470™ Digital Multimeter

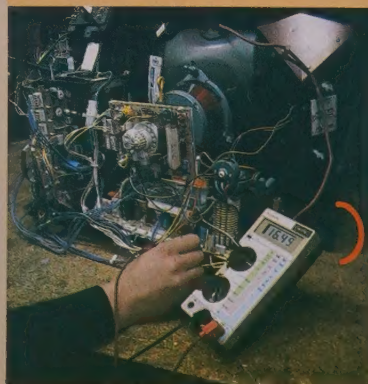
- PROFESSIONAL GRADE Design and Construction
- FULL MEASUREMENT CAPABILITY—100 μ V to 1000 V DC, 100 μ V to 750 V AC, 0.1 Ω to 19.99 M Ω , AC/DC current up to 10 A
- 0.15% DC V ACCURACY—best in its class!
- 0.5", HIGH-CONTRAST LCD DISPLAY—with auto low battery indication
- WIDE TEMPERATURE/HUMIDITY OPERATING RANGE—up to +55°C at 70% humidity, up to 90% humidity at +35°C
- ANTI-SKID PADS—keep the instrument firmly in place when making measurements
- THUMBWHEEL KNOBS—easy range/function selection
- SINGLE 9-VOLT BATTERY—approximately one-year life
- UL RECOGNIZED TEST LEADS—complete with screw-on, insulated alligator clips
- FULL LINE OF OPTIONAL ACCESSORIES—including high-voltage, temperature and RF probes, two "universal" test lead systems and UL Recognized Amp-Clamp adapter and line splitter

The 470 and 474 Feature:

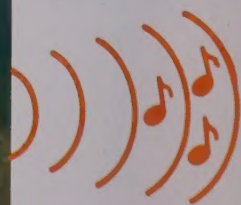
Double Fusing System on current ranges (except 10 A) for both low and high energy overload protection



Diode Test - for "good-bad" semiconductor checks



Transient Protection - all V and Ω ranges protected to 6 kV, up to 100 microseconds



Audible Tone - for quick continuity checks

COMPLETE SPECIFICATIONS ON PAGES 10 AND 11



SIMPSON 470™, complete with 9-volt battery, test leads with insulated screw-on alligator clips and instruction manual. 1-year warranty.

TWO-TONE BROWN COLOR,
Cat. No. 12554 \$139.00
TWO-TONE GRAY COLOR,
Cat. No. 12558 139.00

ACCESSORIES FOR MODEL 470™ AND 474™

- | | |
|---|--------|
| (A) SOFT VINYL CARRYING CASE,
Cat. No. 00822 | 15.00 |
| (B) DELUXE EVER-REDY CARRYING CASE
Cat. No. 00821 | 27.00 |
| (C) SOLID-STATE TEMPERATURE PROBE*,
Cat. No. 00758 | 115.75 |
| (D) THERMOCOUPLE TEMPERATURE
PROBE*, Cat. No. 00760 | 103.00 |
| (E) ACCESSORY THERMOCOUPLE LEAD*,
for 00760, Cat. No. 00171 | 17.75 |
| (F) RF PROBE, Cat. No. 00748 | 41.75 |
| (G) 5 kV AC/DC HIGH-VOLTAGE ADAPTER PROBE,
Cat. No. 00053 | 14.50 |
| (H) 40 kV DC HIGH-VOLTAGE PROBE,
Cat. No. 00749 | 51.75 |
| (I) AC AMP-CLAMP ADAPTER, Model 153-2,
Cat. No. 12494 | 51.00 |
| (J) LINE SPLITTER, Model 151-2, for
Amp-Clamp, Cat. No. 00544 | 15.00 |
| (K) ACCESSORY TEST LEADS with screw-on
alligator clips, Cat. No. 00043 | 9.50 |
| (L) STANDARD TEST LEAD SYSTEM*,
14 components, Cat. No. 05577 | 32.50 |
| (M) DELUXE TEST LEAD SYSTEM*,
23 components, Cat. No. 00818 | 57.00 |

*Described on pages 48 and 49



Built-in-Tilt Stand – for convenient bench or hanging-upright viewing



Choice of Two Optional Carrying Cases – deluxe Ever-Redy neck strap case that provides 2-way hands-free/bench-top use, or soft vinyl-padded pouch with belt strap



For Field Service, Take Along a Hand Portable

Simpson Model 467 DMM . . .

The World's First Digital Multimeter with Digalog™ Display



- LCD Digital and Analog Display
- 26 Ranges
- Measures 100 μ V to 1 kV DC, 100 μ V to 750 V AC, 100 nA to 2000 mA AC/DC, 0.1 Ω to 20 M Ω
- True RMS Measurements
- Differential Peak Hold — captures positive and negative peak values of complex waveforms
- 50 μ sec Pulse Detection up to $\pm$ 35 V logic levels
- Visual and/or Audible Indications of continuity and logic levels
- Tested and Listed by UL—under the UL-1244 Standard for Safety
- Overload Protected on all ranges and functions including high-energy fusing on current ranges
- Compact 2 x 5.63 x 4.6". Wt. 1.5 lbs. (approx.)

Complete with 9 V battery, test leads with screw-on alligator clips and operator's manual.

MODEL 467, BLUE Color, Cat. No. 12551 \$270.00

MODEL 467, BLACK Color, Cat. No. 12552 270.00

See accessories on page 7

Shown
Actual
Size



FULL SPECIFICATIONS ON PAGES 10 AND 11

MODEL 467 DISPLAY SPECIFICATIONS

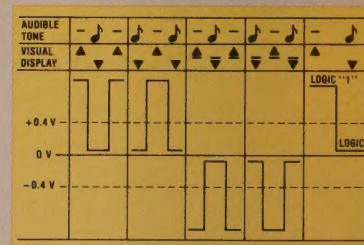
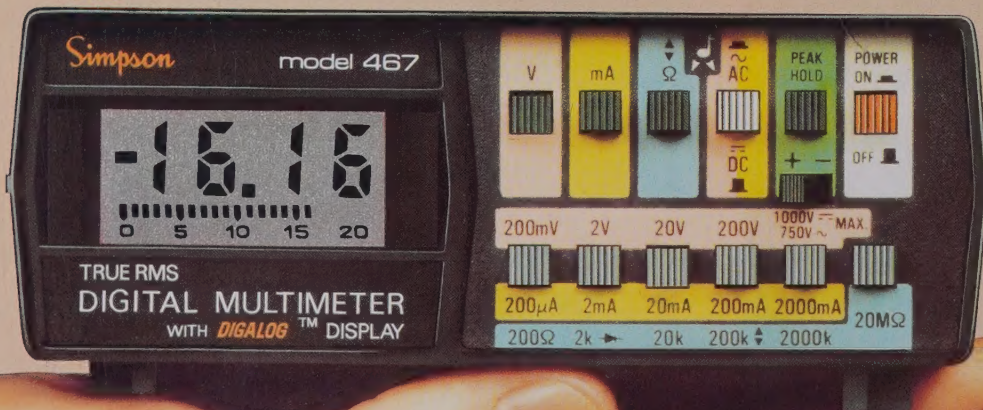
DISPLAY: Numerical Display: 3-1/2 digit, 7 segment, 0.4" LCD. **Bar Graph:** 20 segment LCD bar graph with 2 segment overrange. Absolute-value indication. Left-hand zero. (22 segments total.) **CONVERSION RATE:** Numerical Display: 3 readings/second. Bar Graph: 60 readings/second. **DC Polarity Selection:** Automatic "-" indicated, "+" implied.

BAR GRAPH: Sensitivity: 10 mV on 200 mV range. **Accuracy:** $\pm$ (5% of input + 1 segment). **Maximum Indication:** 110% of range or max. input. **Full Range-Step Response (to rated accuracy):** 150 msec

DIFFERENTIAL PEAK HOLD: (Switch selectable for "+" or "-" peak.) **DC: Peak Hold Accuracy DCV:** $\pm$ (1% of input + 10 counts) DCI; $\pm$ (1.5% of input + 10 counts). **Acquisition Time:** 10 ms min. duration for square pulses. **Display Decay Rate:** 1 count/sec. **AC (100 Hz to 1 kHz) Peak Hold Accuracy:** $\pm$ (3% of input + 10 counts). **Acquisition Time:** 200 ms minimum.

PULSE DETECTION: Reference Level: Approx. $\pm$ 0.4 V. **Display:** "▲" for values greater than reference. "▼" for values less than reference (audio tone coincident with "▼" switch selectable). **Pulse Response:** 50 μ s (min. width of a 0 to $\pm$ 1 V pulse required to turn on display "▲". Pulse stretcher holds display for approx. 100 ms when narrow pulses are detected). **Input Impedance:** 100 k Ω in parallel with 100 pF. **Overload Protection:** 750 V (DC + peak AC)

CONTINUITY: Display: "▲" open circuit. "▼" continuity (with switch selectable tone). **Response Time:** 50 μ s (minimum duration of continuity or open to turn on display or audio tone). Pulse stretcher holds display and tone for approx. 100 ms. **Overload Protection:** 750 V (DC + peak AC) all ranges



Logic Level Detection with Tone and/or Visual Indication — Pulse detection mode indicates presence of positive or negative pulses. The 467 can be used as a logic probe for quick check of digital circuits.

New Exclusive LCD Digalog™ Display — 3½-digit digital read-out for accurate, easy readings — an analog bar graph for quick nulling, peaking and trend indications — and the ability to measure fluctuating signals

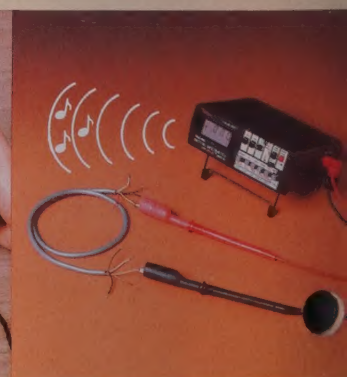
Models
467 and
467E
Feature:



Pushbutton Range and Function Selection — and color coded graphics to minimize operator error.



Conventional Peak Hold — captures maximum surge voltages and currents.



Continuity Check with "Beeper" Tone and/or Visual Indication — detects opens, shorts and high-low resistance conditions.

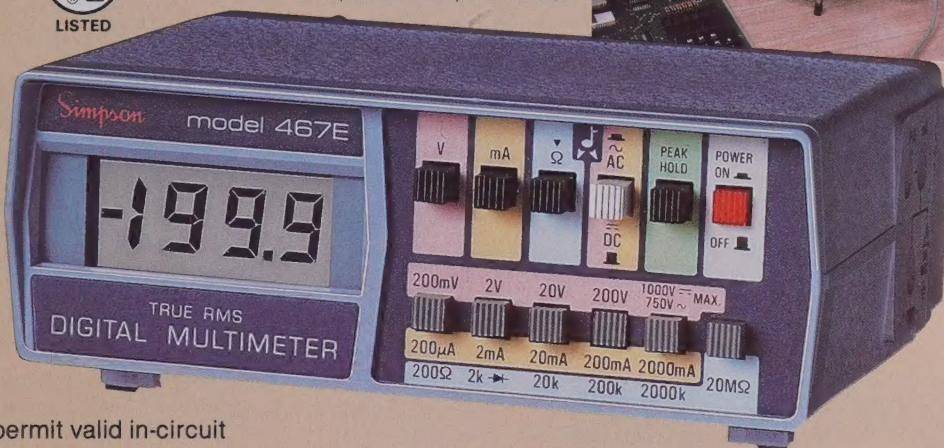
Introducing our New Medium-Priced **Simpson Model 467E** with Peak Hold, Continuity "Beeper," True RMS



Best Design for All Position Viewing – on the bench, on the shelf, on the floor, in the field.



- Peak Hold Mode
- Continuity Mode with "Beeper"
- True RMS Capability
- 26 Ranges – provide full AC/DC voltage, current and resistance (including low power ohms) measurement
- Measures 100 μ V to 1 kV DC, 100 μ V to 750 V AC, 100 nA to 2000 mA AC/DC, 0.1 Ω to 20 M Ω
- Diode Test – provides quick "good-bad" checks of diodes, transistors, IC's
- 3 Low-Power Ohms Ranges – permit valid in-circuit resistance measurements in the presence of semi-conductors
- 0.1% Basic Accuracy
- 750 Volts Overload Protection on All Resistance Ranges
- High Voltage Transient Protection
- Double Fusing System on Current Ranges – for protection in both low and high energy applications
- Color-Coded Front Panel Graphics – to minimize operator error
- Compact 2 x 5.6 x 4.6". Wt. 1.5 lbs. (approx.)
- Choice of Blue or Black High-Impact Molded Case

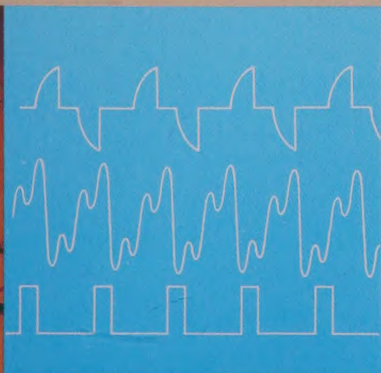


MODEL 467E, BLUE Case, Cat. No. 12553 **\$225.00**
MODEL 467E, BLACK Case, Cat. No. 12573 **225.00**

SPECIFICATIONS ON PAGES 10 AND 11



High Voltage Transient Protection – withstands 6 kV for 100 μ secs on all voltage and resistance ranges.



True RMS Responding – for accurate measurement of complex AC waveforms.

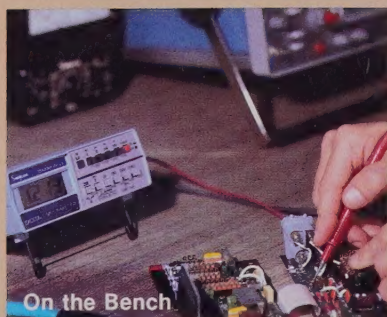
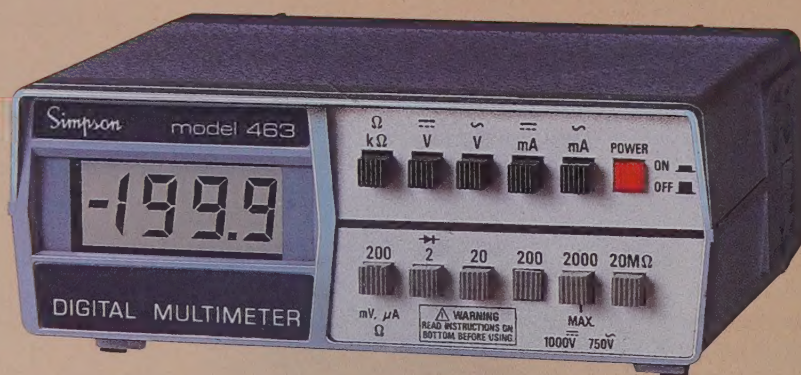
ACCESSORIES FOR MODELS 467 AND 467E

(A) CARRYING CASE, Cat. No. 00813	\$ 26.75
(B) SOLID-STATE TEMPERATURE PROBE, Cat. No. 00758	115.75
(C) THERMOCOUPLE TEMPERATURE PROBE, Cat. No. 00760	103.00
(D) ACCESSORY THERMOCOUPLE LEAD for #00760, Cat. No. 00171	17.75
(E) RF PROBE, Cat. No. 00748	41.75
(F) 5 kV AC/DC HIGH-VOLTAGE ADAPTER PROBE, Cat. No. 00053	14.50
(G) 40 kV DC HIGH-VOLTAGE PROBE, Cat. No. 00749	51.75
(H) AC AMP-CLAMP ADAPTER, Model 153-2, Cat. No. 12494	51.00
(I) LINE SPLITTER, Model 151-2, for Amp-Clamp, Cat. No. 00544	15.00
(J) ACCESSORY TEST LEADS with screw-on alligator clips, Cat. No. 00043	9.50
(K) STANDARD TEST LEAD SYSTEM,* 14 components, Cat. No. 05577	32.50
(L) DELUXE TEST LEAD SYSTEM,* 33 components, Cat. No. 00818	57.00
(M) 10 AMP SHUNT, Cat. No. 00801	26.25
(N) BLACK PROTECTIVE COVER, Cat. No. 00095	3.00



*Described on pages 48 and 49

For a Cordless Portable LCD Test Instrument at a Low Price, Choose the **Simpson Model 463 Digital Multimeter**



- Easy-to-Read, high contrast 0.5" 7-segment 3½-digit liquid crystal display. Easy viewing in daylight or roomlight
- 200-Hours' Continuous Battery Operation on a 9 V alkaline "transistor radio" battery. No power cord or charger needed. Automatic low battery indication
- 0.1% Accuracy on DC voltage ranges
- Transient and Continuous Overload Protection plus all LSI circuitry for extreme reliability
- 26 AC/DC Voltage, Current and Resistance Ranges
- Convenient Pushbutton Range and Function Selection plus automatic polarity and zero
- Compact 2 x 5.63 x 4.6". Weighs only 1 lb.
- UL Listed • One-Year Warranty

The Model 463 compact DMM features a large, easy-to-read, high-contrast 0.5" liquid crystal display. This hand portable unit has 26 AC/DC voltage, current and resistance ranges with 0.1% accuracy on DC voltage ranges. Transient protection is provided, and a single 9 volt battery provides 200-hour cordless operation. It's UL Listed.

MODEL 463 DIGITAL MULTIMETER with 9 V battery, test leads with screw-on alligator clips, and operator's manual, Cat. No. 12649... **\$210.00**
 (A) MODEL 463 CARRYING CASE, Cat. No. 00813 **26.75**

ACCESSORIES FOR MODELS 461-2, 461-2R, 462 and 463

(B) SOLID-STATE TEMPERATURE PROBE*, Cat. No. 00758.....	115.75
(C) THERMOCOUPLE TEMPERATURE PROBE, Cat. No. 00760.....	103.00
(D) ACCESSORY THERMOCOUPLE LEAD*, for 00760, Cat. No. 00171.....	17.75
(E) RF PROBE, Cat. No. 00748.....	41.75
(F) 5 kV AC/DC HIGH-VOLTAGE ADAPTER PROBE, Cat. No. 00053.....	14.50
(G) 40 kV DC HIGH-VOLTAGE PROBE, Cat. No. 00749.....	51.75
(H) AC AMP-CLAMP ADAPTER, Model 153-2, Cat. No. 12494.....	51.00
(I) LINE SPLITTER, Model 151-2, for Amp-Clamp, Cat. No. 00544.....	15.00
(J) ACCESSORY TEST LEADS with screw-on alligator clips, Cat. No. 00043.....	9.50
(K) STANDARD TEST LEAD SYSTEM*, 14 components, Cat. No. 05577.....	32.50
(L) DELUXE TEST LEAD SYSTEM*, 33 components, Cat. No. 00818.....	57.00
(M) 10-AMP SHUNT*, Cat. No. 00801.....	26.25
(N) BLACK PROTECTIVE COVER, Cat. No. 00095.....	3.00



COMPLETE SPECIFICATIONS ON PAGES 10 AND 11

Select from Two Popular-Priced Compact LED DMMs . . .

Average Sensing Model 461-2



MODEL 461-2 3-1/2 digit compact DMM features accuracy of 0.1% on all DC voltage ranges, extended AC voltage measurements to 750 V, frequency response of 20 Hz to 20 kHz, and transient protection. It utilizes an LED display, is supplied with rechargeable nickel cadmium batteries and AC charger/adaptor, and UL Recognized test leads.

MODEL 461-2, AVERAGE SENSING, complete with nickel cadmium rechargeable batteries, battery charger/adaptor, color coded test leads with screw-on alligator clips and operator's manual.

FOR 120 V AC, Cat. No. 12528 **\$204.00**
FOR 220 V AC, Cat. No. 12529 **204.00**

True RMS Sensing Model 461-2R



MODEL 461-2R is the same basic unit as the 461-2 except with true, AC or AC + DC rms sensing for accurate voltage and current measurements of complex and non-sinusoidal waveforms; and a wider frequency response, 20 Hz to 50 kHz.

MODEL 461-2R TRUE RMS SENSING, complete with nickel cadmium rechargeable batteries, battery charger/adaptor, color coded test leads with alligator clip adapters and operator's manual.

FOR 120 V AC, Cat. No. 12531 **\$246.00**
FOR 220 V AC, Cat. No. 12532 **246.00**

ACCESSORIES FOR MODELS 461-2, 461-2R AND 462

CARRYING CASE FOR 461-2, 461-2R, 462,
Cat. No. 00814 **\$ 28.25**
EXTRA 120 V AC ADAPTER, Cat. No. 00743 **9.75**
EXTRA 220 V AC ADAPTER, Cat. No. 00746 **11.00**
REPLACEMENT BATTERY SET, Cat. No. 00044 **21.75**



See page 8 for additional accessories

For Maximum Convenience on the Bench,
in the Field or on the Line, Specify the

Simpson Model 462 Autoranging DMM

- Automatically selects the range and positions the decimal point on voltage and resistance measurements
- Pushbutton function and auto-manual range selection
- 0.25% accuracy on DC voltage ranges
- A/D converter on single LSI chip
- Automatic polarity; bright 0.3" LEDs
- UL Recognized test leads
- Operates 8 hours on a single charge. May be operated from AC line while charging
- High-impact molded case with folding stand
- 120 V model is UL Listed • One-year warranty



MODEL 462 complete with nickel-cadmium batteries, 120 V AC (50-500 Hz) battery charger/adaptor, color coded test leads, alligator clip adapters, operator's manual, Cat. No. 12527 . . **\$256.00**

MODEL 462 as above, but for 220 V AC operation, Cat. No. 12548 **256.00**

ALL MODEL SPECIFICATIONS ON PAGES 10 AND 11



Simpson Hand Portable DMMs

Model	461-2	461-2R	462	463	467	467E	470	474		
DC VOLTAGE										
Ranges	200 mV, 2 V, 20 V, 200 V, 1000 V									
Maximum Sensitivity	0.1 mV on 200 mV range									
Maximum Indication	1000 V									
Accuracy	±(0.1% + 1 count)		±(0.25% + 1)	±(0.1% + 1)			±(0.15% + 1)	±(0.03% + 2)*		
Input Impedance	10 MΩ									
Common Mode Rejection	>120 dB @ 60 Hz						>105 dB @ 60 Hz	>100 dB @ 60 Hz		
Normal Mode Rejection	>55 dB @ 60 Hz		>40 dB @ 60 Hz	>50 dB @ 60 Hz						
Full Scale Step Response	1 sec		3 sec.	1 sec						
Overload Protection	1000 V (DC + peak AC) all ranges		1000 V (DC + peak AC) except 200 mV & 2 V manual (650 V)	1100 V (DC + peak AC)	1000 V (DC + peak AC)			1000 V (DC + peak AC) except 200 mV (250 V (DC + peak AC))		
AC VOLTAGE										
Ranges	200 mV, 2 V, 20 V, 200 V, 750 V		200 mV, 2 V, 20 V, 200 V, 600 V	200 mV, 2 V, 20 V, 200 V, 750 V						
Maximum Sensitivity	0.1 mV on 200 mV range							0.01 mV on 200 mV range		
Maximum Indication	750 V		600 V	750 V						
Accuracy 200 mV	± (0.5% + 2) 20 Hz to 1 kHz	± (0.5% + 3) 20 Hz to 10 kHz	±(0.75% + 5) 50 Hz to 1 kHz ±(5.0% + 5) 1 kHz to 5 kHz	(1.5% + 3) 20 Hz to 40 Hz ±(0.5% ± 2) 40 Hz to 1 kHz ±(1.5% + 3) 1 kHz to 10 kHz +(5% + 5) 10 kHz to 20 kHz	±(1.5% + 5) 20 Hz to 40 Hz ±(0.5% + 5) 40 Hz to 1 kHz ±(5% + 5) 1 kHz to 5 kHz ±1 dB typically 5 kHz to 20 kHz up to 20 V only ± 3 dB typically 20 kHz to 100 kHz up to 20 V only	±(1% + 5) 45 Hz to 1 kHz on all ranges except ±(3% + 5) 500 Hz to 1 kHz on 2 V range		±(1.0% + 5) 45 Hz to 500 Hz ±(1.0% + 10) 500 Hz to 1 kHz		
2 V	± (5% + 2) 1 kHz to 10 kHz	± (5% + 3) 10 kHz to 50 kHz	±(0.75% + 2) 50 Hz to 1 kHz ±(5% + 2) 1 kHz to 5 kHz	±(1.5% + 3) 20 Hz to 40 Hz ±(0.5% + 2) 40 Hz to 400 Hz	±(1.5% + 5) 20 Hz to 40 Hz ±(0.5% + 5) 40 Hz to 400 Hz			±(1.0% + 5) 45 Hz to 500 Hz ±(3% + 10) 500 Hz to 1 kHz		
20 V	±(0.5% + 2 counts) 20 Hz to 1 kHz	±(0.5% + 3) 20 Hz to 1 kHz ±(1.5% + 3) 1 kHz to 10 kHz ±(5% + 3 digits) 10 Hz to 20 kHz						±(1.5% + 3) 20 Hz to 40 Hz ±(0.5% + 2) 40 Hz to 400 Hz	±(1.5% + 5) 20 Hz to 40 Hz ±(0.5% + 5) 40 Hz to 400 Hz	±(1.0% + 5) 45 Hz to 500 Hz ±(1.0% + 10) 500 Hz to 1 kHz
200 V		±(0.5% + 3) 20 Hz to 1 kHz								
750 V (600 V on Model 462)	±(1.0% + 3) 20 Hz to 400 Hz	±(1% + 3) 20 Hz to 400 Hz	±(0.75% + 2) 50 Hz to 400 Hz	±(1.5% + 3) 20 Hz to 400 Hz						
Frequency Response	20 Hz to 10 kHz	20 Hz to 50 kHz	50 Hz to 400 kHz	20 Hz to 20 kHz	20 Hz to 100 kHz		45 Hz to 1 kHz			
Input Impedance	10 MΩ and 100 pF		9 MΩ and 100 pF	10 MΩ and 100 pF						
Conversion Type	Average	True rms (AC or AC plus DC coupled)	Average	True rms (AC coupled)		Average				
Crest Factor	N/A	3:1 min.	N/A	3:1 min.		N/A				
Full Scale Step Response	3 sec		7 sec	3 sec						
Overload Protection	1000 V except 200 mV & 2 V (750 V)	1000 V except 200 mV & 2 V (250 V)	600 V rms except 200 mV & 2 V manual (240 V rms)	1100 V (DC + Peak AC)	1000 V (DC + peak AC) or 750 V rms not to exceed volt-Hertz product of 10 ⁷		1000 V (DC + Peak AC) except 200 mV (300 V (DC + Peak AC))			
RESISTANCE										
Ranges	200 Ω, 2 k, 20 k, 200 k, 2000 k, 20 MΩ		2 k, 20 k, 200 k, 2000 k, 20 MΩ	200Ω, 2 k, 20 k, 200 k, 2000 k, 20 MΩ			200 Ω, 2 k, 20 k, 200 k, 20 MΩ			
Maximum Sensitivity	0.1 Ω on 200 Ω range		1 Ω on 2 kΩ	0.1 Ω on 200 Ω range				0.01Ω on 200 Ω range		
Maximum Indication	19.99 MΩ									
Accuracy 200 Ω 2 kΩ to 200 kΩ 2000 kΩ 20 MΩ	±(0.25% + 2 counts)		±(0.5% + 1)	±(0.25% + 2)	±(0.25% + 1)		±(0.5% + 2)	±(0.2% + 10) ±(0.2% + 2)		
	±(0.75% + 2 counts)		±(1.0% + 1)	±(0.75% + 2)	±(1.0% + 1)		±(2.0 + 2)	N/A ±(0.4% + 2)		
Open Circuit Voltage Typical	<3 V		2 V	<3.5 V	200 Ω, 2 k, 20 MΩ are 2.4 V 20 k, 200 k, 2000 k are .45 V		<3.5 V			
Continuity Test	N/A			See 467 Display Specs on Pg. 6			On 2 kΩ (audible tone)			
Diode Test	2 k range									
Full Scale Step Response	1 sec (except 20 MΩ which is 3 sec)		7 sec	1 sec (except 20 MΩ which is 7 sec)						
Overload Protection	250 V rms				750 V (DC & Peak AC)		250 V rms			

*On 200 mV range; $\pm(0.07\% + 1)$ on all other ranges

Ranges and Specifications



Model	461-2	461-2R	462	463	467	467E	470	474
DC CURRENT								
Ranges	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA		2 mA, 20 mA, 200 mA, 2000 mA	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA			2 mA, 20 mA, 200 mA, 2000 mA, 10 A	
Maximum Sensitivity	0.1 μ A on 200 μ A range		1 μ A on 2 mA range	0.1 μ A on 200 μ A range			.001 mA on 2 mA range	0.0001 mA on 2 mA range
Maximum Indication	1999 mA						10.00 A	
Accuracy								
200 μ A - 20 mA	$\pm(0.5\% + 2)$		$\pm(1.0\% + 1)$	$\pm(0.5\% + 2)$	$\pm(0.5\% + 1)$		$\pm(1.0\% + 1)$	
200 mA	$\pm(0.75\% + 2)$		$\pm(1.0\% + 1)$	$\pm(0.5\% + 2)$	$\pm(0.75\% + 1)$		$\pm(1.0\% + 1)$	
2000 mA	$\pm(0.75\% + 2)$		$\pm(1.5\% + 1)$	$\pm(1.0\% + 2)$	$\pm(0.75\% + 1)$		$\pm(2.0\% + 1)$	
10 A	N/A						$\pm(2\% + 1)$	
Burden Voltage	200 mV				0.25 V max. except 2000 mA (1 V max.)		.25 V max. on 2, 20, 200 mA, 1 V max. on 2000 mA, .3 V on 10 A	
Full Scale Step Response	1 sec							
Overload Protection	2 amp Double Fused						2 amp Double Fused All ranges except 10 A	
AC CURRENT								
Ranges	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA		2 mA, 20 mA, 200 mA, 2000 mA	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA			2 mA, 20 mA, 200 mA, 2000 mA, 10 A	
Maximum Sensitivity	0.1 μ A on 200 μ A range		1 μ A on 2 mA range	0.1 μ A on 200 μ A range			.001 mA on 2 mA range	0.0001 mA on 2 mA range
Maximum Indication	1999 mA						10.00 A	
Accuracy								
200 μ A - 20 mA	$\pm(1.0\% + 2)$ 20 Hz - 1 kHz		$\pm(1.5\% + 5)$ 50 Hz - 1 kHz	$\pm(1.5\% + 3)$ 40 Hz to 1 kHz $\pm(5\% + 5)$ 1 kHz to 5 kHz	$\pm(2.0\% + 5)$ 20 Hz to 40 Hz $\pm(1.5\% + 5)$ 40 Hz to 1 kHz		$\pm(2\% + 5)$ all ranges except 2000 mA & 10 A $(\pm(3.0\% + 5))$ 45 Hz to 1 kHz	
200 mA	$\pm(1.5\% + 2)$ 20 Hz - 1 kHz		$\pm(1.5\% + 5)$ 50 Hz - 1 kHz					
2000 mA	$\pm(1.5\% + 2)$ 20 Hz - 1 kHz		$\pm(2.0\% + 5)$ 50 Hz - 1 kHz					
10 A	N/A							
Frequency Response	20 Hz - 1 kHz		50 Hz - 1 kHz	40 Hz - 5 kHz	20 Hz to 1 kHz		45 Hz to 1 kHz	
Conversion Type	Average	True rms (AC or AC plus DC coupled)	Average		True rms (AC coupled)		Average	
Crest Factor	N/A	3:1 min	N/A		3:1 min.		N/A	
Full Scale Step Response	3 sec		5 sec.	3 sec				
Burden Voltage	200 mV				0.25 V max. except 2000 mA (1 V max.)		.25 V max. on 2, 20, 200 mA, 1 V max. on 2000 mA, .3 V on 10 A	.25 V max. on 2, 20, 200 mA, .9 V max. on 2000 mA, .3 V on 10 A
Overload Protection	2 amp Double Fused						2 amp Double Fused All ranges except 10 A	
GENERAL								
Rated Circuit-to-Ground Voltage	Without charger connected 1000 V (DC & Peak AC) max.		With charger connected 300 V (DC & Peak AC)	1000 V (DC + Peak AC)				
Display	3-1/2 digit, seven segment, .3" LED			3-1/2 digit, 7 segment 5" LCD	3-1/2 digit, .4" LCD with bar graph	3-1/2 digit, 0.5", 7 segment LCD	3-1/2 digit, 7 segment LCD	4-1/2 digit 7 segment LCD
DC Polarity Selection	Automatic, "+" implied, "-" indication displayed							
Conversion Rate	3/sec				Numerical Display 3/sec Bar graph 60/sec	3/sec		1.5/sec
Power Requirements								
AC	120 or 240 V AC models			N/A				
DC	4 "AF" size NiCad rechargeable batteries			9 V Alkaline NEDA 1604A				
Battery Life	8 hrs. nominal before recharge			200 hrs.				
Operating Temp.	0° to +55°C			+5° to +40°C	0° to +55°C	0° to +55°C	0° to +55°C	0° to +55°C
Storage Temp.	-40° to +60°C			-40° to +60°C	-40° to +70°C	-40° to +60°C	-40° to +70°C	-40° to +70°C
Humidity	0 to 90% non-condensing			0 to 90% up to 35° C/70% up to 55° C				
Temperature Coefficient	<0.1 times the applicable accuracy specification per °C							
Case Material	High-impact molded ABS							
Dimensions (HxWxD)	2" x 5.63" x 4.6"						1.8" x 3.4" x 7.1"	
Weight	1.5 lb. with batteries			1 lb.	1.5 lbs.	1 lb., 5 oz.	1 lb.	

Only Simpson offers you a complete and constantly growing line of safety-designed and tested digital and analog multimeters! You can choose from over 30 UL Listed Simpson DMMs, VOMs, and clamp-on testers, plus a wide assortment of UL Recognized test instrument accessories.

For Bench or Portable Servicing

Simpson Model 464-3



- Reliable bi-polar LSI design with automatic zeroing and polarity
- Measures 100 μ V to 1 kV DC, 100 μ V to 600 V AC, 0.1 Ω to 20 M Ω , 100 nA to 10 A AC/DC
- Pushbutton selected functions and ranges
- 0.1% DC V accuracy
- Choice of AC line and rechargeable battery operation or AC line operation only
- High-impact case and tilt-view adjustable handle
- 120 V models are UL Listed
- 3 1/2-digit 0.43" red LED display

For lab, production testing, service and maintenance where a high-quality instrument is needed but budgets are limited. LSI circuitry for stability and reliability. Meets the UL 1244 Standard for Safety of Electrical and Electronic Measuring and Testing Equipment, and ANSI C39.5 specifications. Choice of AC line power models for low cost or AC/battery power models for greater flexibility. Modern impact-resistant case, tilt-view handle. 2.7 x 8.4 x 9.0". Wt., 3 lbs. without batteries.

MODEL 464A-3 DIGITAL MULTIMETER FOR AC LINE OPERATION. Complete with color-coded test leads with screw-on alligator clips, detachable AC line cord and manual.

FOR 120 V, Cat. No. 12657. **\$304.00**
FOR 220 V, Cat. No. 12658. **304.00**
FOR 240 V, Cat. No. 12659. **304.00**

MODEL 464D-3 FOR AC LINE AND RECHARGEABLE BATTERY OPERATION. Batteries not included. Complete with color-coded test leads with screw-on alligator clips, detachable AC line cord and manual.

FOR 120 V, Cat. No. 12661. **\$355.00**
FOR 220 V, Cat. No. 12662. **355.00**
FOR 240 V, Cat. No. 12663. **355.00**

Select AC or DC Voltage, Resistance or Proper Current Mode; the 465 Does the Rest

Simpson Model 465-3 Autoranging DMM



- Automatic range selection
- Range HOLD for fast repeated tests
- 3-1/2 digit, 0.43" LED readout with autopolarity, floating decimal, zero blanking
- Custom MOS/LSI integrated circuitry
- Pushbutton function selection
- Measures 100 μ V to 1 kV DC, 100 μ V to 600 V AC, 1 Ω to 20 M Ω (high power), 1 Ω to 2000 k Ω (low power), 100 nA to 10 A AC/DC
- 0.1% DC V accuracy
- High-impact shock-resistant case with tilt-view handle
- 120 V models are UL Listed

This 3-1/2 digit 0.1% autoranging DMM reads out on bright 0.43" LEDs with properly positioned decimal point, auto polarity and zero blanking. A special HOLD function lets you lock the range in use so you can perform repeated measurements faster. All modes are overload protected. Meets UL-1244 standards and ANSI C39.5 requirements. 2.7 x 8.4 x 9.0". Wt., 3 lbs. without batteries.

MODEL 465A-3 FOR AC LINE OPERATION. Complete with line cord, test leads and instruction manual.

120 V AC, Cat. No. 12664. **\$423.00**
220 V AC, Cat. No. 12665. **423.00**
240 V AC, Cat. No. 12666. **423.00**

MODEL 465D-3 FOR AC LINE RECHARGEABLE BATTERY OPERATION (batteries not included). Complete with line cord, test leads and instruction manual.

120 V AC, Cat. No. 12667. **\$476.00**
220 V AC, Cat. No. 12668. **476.00**
240 V AC, Cat. No. 12669. **476.00**

Our Deluxe Bench DMM . . .

Simpson Model 460-5

with 0.1 % DC V Accuracy, Low-Power Ohms
and Auxiliary Analog Meter



- 3½ digit 0.43" red LED display
- Special MOS-LSI circuitry for high reliability
- Pushbutton selected functions and 32 ranges
- 100 μ V to 1000 V DC, 100 μ V to 600 V AC, 0.1 Ω to 20 M Ω (5 low power ohms ranges), 100 nA to 10 A AC/DC
- Automatic zeroing and polarity
- Overload protection on all ranges
- Analog meter for nulling, peaking, scanning trends
- 0.1 % DC V accuracy
- Choice of nickel-cadmium battery/AC line operation, or AC line operation only
- High-impact case with adjustable tilt-view handle
- 120 V models are UL Listed
- Size: 2.7 x 8.4 x 9.0". Wt., 3 lbs. without batteries

Simpson's deluxe DMM offers 0.1% accuracy on DC voltage ranges. Low-power ohms ranges let you make accurate in-circuit measurements without switching on or damaging solid-state components. An auxiliary calibrated analog meter permits fast continuity checks and convenient observation for peaks or nulls. Meets the UL 1244 Standard for Safety of Electrical and Electronic Measuring and Testing Equipment, and ANSI C39.5 specs. Choose AC line power model for lowest price or AC/battery model for best flexibility. Impact-resistant case, tilt-view handle.

Complete with color-coded test leads with screw-on alligator clips, detachable AC line cord and manual.

460A-5 DIGITAL MULTIMETER FOR AC LINE OPERATION

FOR 120 V, Cat. No. 12651	\$397.00
FOR 220 V, Cat. No. 12652	397.00
FOR 240 V, Cat. No. 12653	397.00

460D-5 FOR AC LINE OR RECHARGEABLE BATTERY OPERATION

Batteries not included

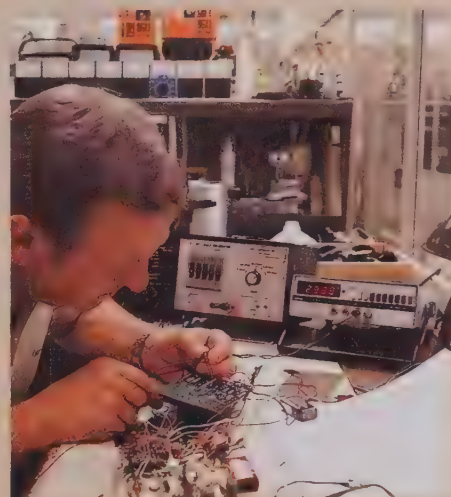
FOR 120 V, Cat. No. 12654	451.00
FOR 220 V, Cat. No. 12655	451.00
FOR 240 V, Cat. No. 12656	451.00

ACCESSORIES

(A) CARRYING CASE, Cat. No. 01617	42.25
(B) SOLID-STATE TEMPERATURE PROBE*, Cat. No. 00758	115.75
(C) THERMOCOUPLE TEMPERATURE PROBE, Cat. No. 00760	103.00
(D) ACCESSORY THERMOCOUPLE LEAD* for #00760, Cat. No. 00171	17.75
(E) RF PROBE, Cat. No. 00748	41.75
(F) 5 kV AC/DC HIGH-VOLTAGE ADAPTER PROBE, Cat. No. 00053	14.50
(G) 40 kV DC HIGH-VOLTAGE PROBE, Cat. No. 00749	51.75
(H) AC AMP-CLAMP ADAPTER, Model 153-2, Cat. No. 12494	51.00
(I) ACCESSORY TEST LEADS with screw-on alligator clips, Cat. No. 00043	9.50
(J) STANDARD TEST LEAD SYSTEM*, 14 components, Cat. No. 05577	32.50
(K) DELUXE TEST LEAD SYSTEM*, 33 components, Cat. No. 00818	57.00
(L) LINE SPLITTER, Model 151-2, for Amp-Clamp, Cat. No. 00544	15.00

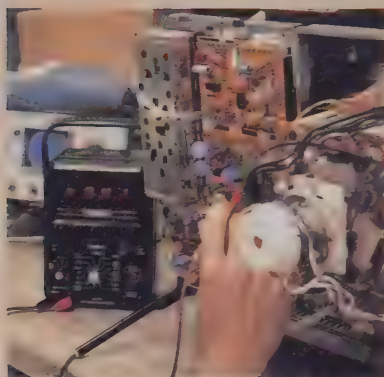
*Fully described on pages 48 and 49

ALL MODELS COMPLETE SPECIFICATIONS ON PAGES 16 AND 17



For Those Who Desire the Traditional
VOM Styling, there's the Deluxe

Simpson 360-2 Portable Digital VOM . . .



Ideal for production line testing, field service, engineering labs or communications service



Double fusing system on current ranges (except 10 A) provides added overload protection in both low and high energy applications. Spare fuses are included.



UL recognized safety-engineered test leads with screw-on alligator clips included with each instrument

SPECIFICATIONS ON PAGES 16 AND 17



- 3-1/2-digit, auto polarity, 0.43" LED display
- 29 popular ranges including 2 "low power" ohms ranges
- Full measurement capability—100 μ V to 1000 V DC, 100 μ V to 600 V AC, 10 nA to 10 A DC, 100 nA to 10 A AC, 0.1 Ω to 20 M Ω
- 0.25% DC V accuracy
- Calibrated zero-center analog meter for nulling, peaking and scanning trends
- Analog output provision permits monitoring input signal with chart recorder
- Exclusive MOS/LSI circuitry provides compactness with high reliability and low-power dissipation
- Conforms to applicable ANSI C39.5-1974 safety requirements
- Separate battery charger and line cord

This versatile digital multimeter will satisfy most general test and service requirements. Special features include two ranges of low-power ohms for solid-state circuit servicing, and a calibrated zero-center analog meter for continuity checks and peaks or nulling. Calibrated analog output interfaces with a chart recorder. The battery charger removes with the line cord to minimize weight for portable use. The traditional case styling is both compact and rugged. Size, 7.2 x 5.4 x 3.9" (not including panel controls). Wt. 4 lbs.

360-2 DIGITAL VOM. Complete with test leads, AC charger/adaptor and operator's manual (batteries not included).

FOR 120 V AC, Cat. No. 12286 **\$375.00**
FOR 220 V AC, Cat. No. 12287 **375.00**

EXTRA 120 V AC ADAPTER/CHARGER, Cat. No. 12288 **14.50**

EXTRA 220 V AC ADAPTER/CHARGER, Cat. No. 12289 **14.50**

BATTERIES, pkg. of 4, Cat. No. 00045 **47.25**

See accessories page 15



- 28 Ranges — including "low power" ohms and 10 amp AC/DC current
- Full measurement capability — 100 μ V to 1000 V DC, 100 μ V to 750 V AC, 0.1 Ω to 20 M Ω , 100 nA to 10 A AC/DC.
- Transient Protection — all voltage and resistance ranges protected against transients up to 6 kV at 100 microseconds
- 0.1% DC V accuracy
- Easy-to-Read LED Display — large 0.56" light-emitting diode display
- Continuity Beeper — audible tone on 2000 ohm range for fast continuity checks
- Diode Test — provides quick "good-bad" checks of semi-conductor junctions
- 12 Hours' Battery Operation Time — full day's use on a single charge
- Double Fusing System on Current Ranges (except 10 A) — for overload protection in both low and high-energy applications

... and the Medium-Priced

Simpson 360 Series 3



SIMPSON 360-3, complete with rechargeable batteries, AC adapter/charger, test leads with insulated screw-on alligator clips and operator's manual. One-year warranty. Size: 7.2 x 5.4 x 3.2". Wt. 4 lbs.

FOR 120 V AC, Cat. No. 12282	\$275.00
FOR 220 V AC, Cat. No. 12284	275.00
EXTRA 120 V CHARGER, Cat. No. 00743	14.50
EXTRA 240 V CHARGER, Cat. No. 00746	14.50
REPLACEMENT BATTERY PACK, Cat. No. 00046	23.00

ACCESSORIES

(A) CARRYING CASE for 360-2, Cat. No. 00816	41.75
(A) CARRYING CASES for 360-3, Cat. Nos. 00812, 00549, 00248, 00805 or 01818, see Pg. 51	
(B) SOLID-STATE TEMPERATURE PROBE*, Cat. No. 00758	115.75
(C) THERMOCOUPLE TEMPERATURE PROBE, Cat. No. 00760	103.00
(D) ACCESSORY THERMOCOUPLE LEAD* for 00760, Cat. No. 00171	17.75
(E) RF PROBE, for 360-3, No. 00748; for 360-2, No. 00433	41.75
(F) 5 kV AC/DC HIGH-VOLTAGE ADAPTER PROBE, Cat. No. 00053	14.50
(G) 40 kV DC HIGH-VOLTAGE PROBE, for 360-3, No. 00749; for 360-2, No. 00432	51.75
(H) AC AMP-CLAMP ADAPTER, for 360-3, No. 12494; for 360-2, No. 12495	
(I) TEST LEADS with screw-on clips, for 360-3, No. 00043; for 360-2, No. 12495	9.50
(J) STANDARD TEST LEAD SYSTEM,* 14 components, Cat. No. 05577	32.50
(K) DELUXE TEST LEAD SYSTEM,* 33 components, Cat. No. 00818	57.00
(L) LINE SPLITTER, for Amp-Clamp, Cat. No. 00544	15.00



*Fully described on page 48 and 49

COMPLETE SPECIFICATIONS ON PAGES 16 AND 17



Simpson Bench Portable DMMs

Model	360-2		460-5A & D	464-3 A & D	465-3 A & D	360-3
DC VOLTAGE						
Ranges	200 mV, 2 V, 20 V, 200 V, 1000 V				0.2 V, 2 V, 20 V, 200 V 1000 V	200 mV, 2 V, 20 V, 200 V, 1000 V
Maximum Sensitivity	0.1 mV on 200 mV range				.0001 V on 0.2 V range	0.1 mV on 200 mV range
Maximum Indication	1000 V					
Accuracy	±(0.25% + 1)		±(0.1% + 1)			
Input Impedance	10 MΩ					
Common Mode Rejection	≥100 dB @ DC ≥80 dB @ 60 Hz		≥90 dB @ 60 Hz			≥120 dB @ 60 Hz
Normal Mode Rejection	≥35 dB @ 60 Hz		≥55 dB @ 60 Hz		≥50 dB @ 60 Hz	
Full Scale Step Response	1 sec				2 sec	1 sec
Overload Protection	1100 V (DC & peak AC) except 200 mV & 2 V (350 V)		1000 V (DC + peak AC) all ranges			
AC VOLTAGE						
Ranges	200 mV, 2 V, 20 V, 200 V, 600 V				0.2 V, 2 V, 20 V, 200 V 600 V	200 mV, 2 V, 20 V, 200 V, 750 V
Maximum Sensitivity	0.1 mV on 200 mV range				0.0001 V on 0.2 V range	0.1 mV on 200 mV range
Maximum Indication	600 V					750 V
Accuracy 200 mV to 20 V	±(0.5% + 1) 40 Hz to 1 kHz ±(1.0% + 1) 1 kHz to 10 kHz ±(2.0% + 2) 10 kHz to 20 kHz	±(0.5% + 2) 40 Hz to 10 kHz ±(1.0% + 2) 10 kHz to 20 kHz	±(0.5% + 2) 40 Hz to 1 kHz ±(1.0% + 2) 1 kHz to 10 kHz	±(0.5% + 2) 40 Hz to 10 kHz ±(1.0% + 2) 10 kHz to 20 kHz	±(0.5% + 2) 40 Hz to 1 kHz ±(5.0% + 2) 1 kHz to 10 kHz	
200 V	±(0.5% + 1) 40 Hz to 1 kHz ±(1.0% + 1) 1 kHz to 10 kHz ±(5.0% + 2) 10 kHz to 20 kHz			±(0.5% + 2) 40 Hz to 1 kHz ±(1.0% + 2) 1 kHz to 20 kHz	±(0.5% + 2) 40 Hz to 1 kHz	
600 V	±(0.5% + 1) 40 Hz to 1 kHz	±(0.5% + 2) 40 Hz to 400 Hz ±(1.0% + 2) 400 Hz to 20 kHz	±(0.5% + 2) 40 Hz to 1 kHz only	±(2% + 2) 40 Hz to 1 kHz	*750 V range ±(1% + 3) 40 Hz to 400 Hz	
Frequency Response	40 Hz to 20 kHz		40 Hz to 10 kHz		40 Hz to 20 kHz except 40 Hz to 1 kHz on 600 V	
Input Impedance	10 MΩ & 100 pF		10 MΩ & 75 pF		10 MΩ & 25 pF	
Conversion Type	Average					
Full Scale Step Response	5 sec				7 sec	3 sec
Overload Protection	650 V rms except 200 mV and 2 V (350 V rms)	600 V rms except 200 mV and 2 V (350 V rms)	600 V rms			1000 V (DC + peak AC) except 200 mV & 2 V (750 V (DC + peak AC))
RESISTANCE (Standard Power)						
Ranges	2 k, 200 k, 2 MΩ, 20 MΩ	2 k, 20 k, 200 k, 2000 k, 20 MΩ	200Ω, 2 k, 20 k, 200 k, 2000 k, 20 MΩ	2 k, 20 k, 200 k, 2000 k 20 MΩ	200Ω, 2 k, 20 k, 200 k, 2000 k, 20 MΩ	
Maximum Sensitivity	1 Ω on 2 kΩ range		0.1 Ω on 200 Ω		0.1 Ω on 200Ω range	
Maximum Indication	19.99 MΩ					
Accuracy 2 k to 200 kΩ	±(0.5% + 1)	±(0.25% + 1)	±(0.5% + 1)	±(0.4% + 2)	±(0.25% + 2)	
2000 k	±(1.0% + 2)	±(0.5% + 2)				
20M			±(1.0% + 1)	±(1.0% + 3)	(0.75% + 2)	
Open Circuit Voltage	N/S			2.5 V max	<3 V all ranges	
F.S. Test Voltage	2 V		2 V except 200 mV on 200 Ω + 200 kΩ		N/S	
Test Current	1 mA max			N/S		
Full Scale Step Response	1 sec except 20 MΩ (10 sec)		2 sec except 20 MΩ (7 sec)		3 sec except 20 MΩ (7 sec)	1 sec except 20 MΩ (3 sec)
Overload Protection	250 V rms except 150 V rms on 200 Ω & 2 k	250 V rms except 135 V rms on 2 k	250 V rms except 135 V rms on 200 Ω & 2 k		130 V AC or DC	250 V rms
RESISTANCE (Low Power)						
Ranges	200 Ω, 20 k	200 Ω, 2 k, 20 k, 200 k, 2000 k	N/A		2 k, 20 k, 200 k, 2000 k	N/A
Maximum Sensitivity	0.1 Ω on 200 Ω range		N/A		1 Ω on 2 k range	N/A
Maximum Indication	19.99 kΩ	1999 kΩ	N/A		1999 kΩ	N/A
Accuracy 200 Ω-200 kΩ	±(0.5% + 1)	±(0.25% + 1)	N/A		±(0.4% + 2)	N/A
2000 kΩ	N/S	±(0.5% + 2)	N/A		N/A	N/A
Open Circuit Voltage	N/S	≤1 V	N/A		≤350 mV	N/A
Full Scale Test Voltage	200 mV		N/A		N/S	N/A
Test Current	1 mA max.		N/A		NS	N/A
Full Scale Step Response	1 sec		N/A		3 sec	N/A
Overload Protection	150 V rms (200 Ω)/ 250 V rms (20 k)	250 V rms except 200 Ω (135 V rms)	N/A		130 V AC or DC	N/A

Ranges and Specifications



Model	360-2	460-5A & D	464-3 A & D	465-3 A & D	360-3
DC CURRENT					
Ranges	20/200 μ A, 2/20/200 mA, 2/10 A	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA, 10 A		0.2 mA, 2 mA, 20 mA, 0.2 A, 2 A, 10 A	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA, 10 A
Maximum Sensitivity	0.01 μ A on 20 μ A range	0.1 μ A on 200 μ A		.0001 mA on 0.2 mA	0.1 μ A on 200 μ A
Maximum Indication	10.00 A				
Accuracy	$\pm(0.5\% + 1)$	NA	NA	NA	NA
200 μ A		$\pm(0.25\% + 1)$	$\pm(0.5\% + 1)$	$\pm(0.25\% + 1)$	$\pm(0.5\% + 2)$
2 mA to 20 mA					
200 mA					$\pm(0.75\% + 2)$
2 A		$\pm(1.0\% + 1)$	$\pm(1.0\% + 1)$	$\pm(1.0\% + 1)$	$\pm(1.0\% + 2)$
10 A					
Burden Voltage	200 mV except 10 A (100 mV)			200 mV on 0.2 mA, 20 mA, 0.2 A, 2 V on 2 mA, 2 A, 100 mV on 10 A	200 mV except 0.9 V on 2000 mA and 300 mV on 200 mA
Full Scale Step Response	1 sec			2 sec	1 sec
Overload Protection	3 mA on 20 μ A 25 mA on 200 μ A 1/2 amp Fuse on 2/20/200 mA 3 A on 2 A 10 A on 10 A	2.5 amp Fuse except 10 amp (10 amp max.)		30 mA on 0.2 mA, 2 mA, 2 A on 20 mA, 0.2 A, 2 A, 10 A on 10 A	2 Amp fuse on all ranges except 10 Amp on 10 A
AC CURRENT					
Ranges	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA, 10 A			0.2 mA, 2 mA, 20 mA, 0.2 A, 2 A, 10 A	200 μ A, 2 mA, 20 mA, 200 mA, 2000 mA, 10 A
Maximum Sensitivity	0.1 μ A on 200 μ A range			0.0001 mA on .2 mA range	0.1 μ A on 200 μ A range
Maximum Indication	10.00 A				
Accuracy	$\pm(1.0\% + 1)$ 40 Hz to 10 kHz	$\pm(0.7\% + 2)$ 40 Hz to 10 kHz	$\pm(1.5\% + 2)$ 40 Hz to 10 kHz	$\pm(1.0\% + 2)$ 40 Hz to 5 kHz	$\pm(1.0\% + 2)$ 40 Hz to 1 kHz $\pm(6.0\% + 2)$ 1 kHz to 10 kHz
200 mA					$\pm(1.5\% + 2)$ 40 Hz to 1 kHz $\pm(6.0\% + 2)$ 1 kHz to 10 kHz
2A	$\pm(2.0\% + 2)$ 40 Hz to 10 kHz	$\pm(1.5\% + 2)$ 40 Hz to 10 kHz	$\pm(2.0\% + 2)$ 40 Hz to 10 kHz	$\pm(1.5\% + 2)$ 40 Hz to 5 kHz	$\pm(3.0\% + 2)$ 40 Hz to 1 kHz
10 A					
Frequency Response	40 Hz to 10 kHz			40 Hz to 5 kHz	40 Hz to 10 kHz
Burden Voltage	200 mV except 10 A (100 mV)			200 mV on 0.2 mA, 20 mA, 0.2 A, 2 V on 2 mA, 2A, 100 mV on 10 A	200 mV all ranges except .9 V on 2000 mA, 300 mV on 200 mA
Conversion Type	Average				
Full Scale Step Response	5 sec				3 sec
Overload Protection	25 mA on 200 μ A 1/2 A Fuse on 2/20/200 mA 3 A on 2 A, 10 A on 10 A	2.5 amp Fuse except 10 amp (10 amp max.)		30 mA on 0.2 mA, 2 mA, 2 A on 20 mA, 0.2 A, 2 A, 10 A on 10 A	2 A fuse on all ranges except 10 A (10 A)
GENERAL					
Rated-Circuit-to-Ground Voltage	1000 V DC (battery only) 300 V (DC + peak AC) (battery & charger)	1000 V (DC + peak AC) max.			1000 V DC (battery only) 300 V (DC + peak AC) (battery & charger)
Display	3-1/2 digit, 0.43", 7 segment LED				3-1/2 digit, 0.56" 7 segment LED
Polarity	Automatic, with "+" or "-" indication				Automatic "-" indication, "+" indication implied
Analog Meter	50-0-50 μ A DC	1-1/2" edgewise	Not available		
Analog Output	1 V - 1000 Counts	Not available			
Conversion Rate	3/sec	4/sec	3/sec	4/sec	3/sec
Power	120 or 220 VAC 4 NiCad "C" Size 1.5 amp/Hr	A & D version, 120, 220 or 240 VAC D version only, 4 NiCad "D" Size 4 amp/Hr			120 or 230 VAC, 4 "AF" Size NiCad Rechargeable
AC Line					
DC Battery					
Battery Life	8 hrs. before recharge			10 hrs. before recharge	12 hrs. before recharge
Temperature Operating	0 to 50°C	0 to 55°C			
Storage	-40°C to +60°C				
Temperature Coefficient	<0.1 x the applicable accuracy specifications				
Relative Humidity	0-90%				
Reference Conditions					
Temperature	+25°C $\pm$ 1°C		+23°C $\pm$ 1°C		
RH	30-60%				
PSI	575-800 mm Hg				
Case Material	Phenolic	ABS			Phenolic
Dimensions	7.2" x 5.4" x 3.9"	2.7" x 8.4" x 9.0"			7.2" x 5.4" x 3.2"
Weight	4 lbs.	3 lbs. without batteries			3 lbs. with batteries



**World
Famous**

Simpson

A 260 does many things
that even the best
general-purpose digital
multimeters cannot do
... or cannot do as well:

- Large, continuous analog display for directly indicating trends and quick, easy nulling and peaking
- Quick, positive "yes/no" checks for voltage, current and continuity
- Reliable and rapid checks of semiconductor junctions and forward/reverse resistance tests
- High-current, low-resistance range pinpoints marginal bad contacts and cold solder joints
- Wide, dynamic, continuous resistance ranges, not limited by the number of display digits
- Built-in wide-range -20 to +50 dB measurement facilities
- Superior AC frequency response to 100 kHz
- High immunity to voltage transients and rf interference—no expensive chips to wipe out
- Does not generate rf radiation to cause interference or to trigger external sensitive circuits
- Needs no external power, avoids common mode problems
- Fully passive voltage, current and dB tests, independent of any internal or external power source
- Simple design for lowest maintenance costs and highest reliability

The New 260 Series 7 has all of the advancements and circuit protection features for which the Series 6 was famous... **PLUS MANY NEW ADVANTAGES:**



New reverse, recessed, insulated panel connectors with matching safety-engineered test leads



Off/Transit position of the function switch shunts the meter movement and opens internal connections to the common and "+" jacks



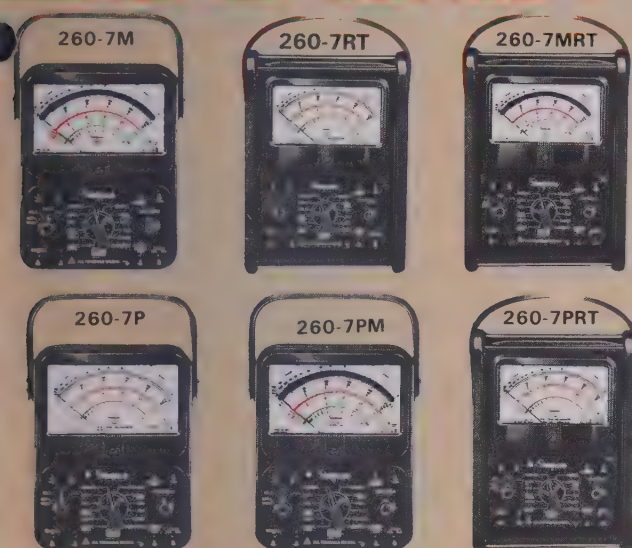
Doubly-fused protection network now conveniently located in the directly accessible battery-and-fuse compartment



All 260 Series 7 VOMs employ the Simpson varistor overload-protected taut-band suspension meter movement. All "P" versions include the additional Simpson overload relay circuit protection system.

The Simpson 260-7, 260-6XL and 270-5
all meet the new UL 1244 Standard for Safety of Electrical
and Electronic Measuring and Test Equipment

260[®] Series 7



Choose the 260 VOM that's best for you

Complete with batteries, color-coded test probe leads with screw-on clips and instruction manual.

260-7 (varistor protected meter) #12268. \$119.00

260-7M (with mirror scale) #12269. . . . 127.00

260-7RT (in roll-top protective case) #12272. 139.00

260-7MRT (mirror scale and roll top case) #12273. 147.00

260-7P (relay overload protected) #12274. 170.00

260-7PM (relay overload protected with mirror scale) #12277. 178.00

260-7PRT (relay overload protected in roll top case) #12279. 190.00

260-7PMRT (relay overload protected with mirror scale and roll top case) #12276. . . 198.00

Full ranges and specifications on following page.

ACCESSORIES FOR 260-7 AND 260-6XL VOMs

*UL RECOGNIZED ACCESSORIES	Series		Price
	260-6XL	260-7	
(A) Solid-State Temperature Probe	00758	00758	\$115.75
(B) Thermocouple Temp. Adapter	00760	00760	103.00
(C) Model 150-2 Amp-Clamp Adapter	00541	00545	51.00
(D) 40 kV DC Probe	00168	00411	42.00
(D) 10 kV DC Probe	00034	00412	42.00
(D) 10 kV AC Probe	00036	00413	42.00
(E) 5 kV DC Probe	00795	00795	14.50
(E) 5 kV AC Probe	00794	00794	14.50
(F) Low power ohms Probe	—	00414	53.75
(G) Extra Test Leads with screw-on clips	00125	00043	9.50
Extra Probe Tip Leads	07538	—	8.25
Alligator clip Leads	07500	—	7.25
(H) Roll Top Case (00249 for -3, -4, -5)	**	00248	27.90
(I) Leatherette Case with storage space	00549	00549	40.75
(J) Molded Top Hinged Case	00812	00812	36.00
(K) Leatherette Ever-Ready Hard Case	00805	00805	36.00
Vinyl Sheath Case	01818	01818	29.50
Molded Snap-On Front Dust Cover (Pkg. 10)	02163	02163	32.00
(L) Model 151-2 Line Splitter (for 150-2)	00544	00544	15.00

**Not for XL Series



For the Special Needs of Solid-State Circuitry Measurements
...the

260-6XL



X for Extra Ranges,
Extra Features

L for Low-Power
Ohms Ranges

260-6XL

EXTRA FEATURES

Extra large viewing area with four-color, color-keyed scales
Extra drop-resistant, high-impact custom-molded panel and case

EXTRA RANGES

DC Volts: 0-25 and 0-100

AC Volts: 0-25 and 0-100

DC Milliamperes: 0-5 and 0-50

DC Amperes: 0-5 (250 mV drop)

dB Scale: -1 to +29 and +11 to +41 (1 mW 600 Ω reference)

Standard Resistance:

RX1 (6 Ω center scale)

RX100 (600 Ω center scale)

RX1k (6,000 Ω center scale)

RX10k (60,000 Ω center scale)

Low-Power Resistance:

RX1 (20 Ω center scale)

RX10 (200 Ω center scale)

Max. Open Circuit Voltage:

Only 100 mV. **Max. Measuring Power:** Only 0.125 mW

Simpson developed the 260-6XL to answer the need for a volt-ohm-milliammeter with extra features including drop resistant construction, low-power ohms and additional voltage, current and resistance ranges. It has an extra large viewing area, 4-color, color-keyed scales and 33 measuring ranges plus all of the deluxe features of the famous 260.



260-6XLM



260-6XLP

Complete with batteries, color-coded test probe leads with screw-on clips and instruction manual.

260-6XL, Cat. No. 12205. \$139.00

260-6XLM with mirror scale, Cat. No. 12206. 147.00

And the Circuit Overload-Protected 260-6XLP

Reset pushbutton releases when overload occurs. Will not reset until overload condition is eliminated.

260-6XLP, Cat. No. 12207. \$190.00

260-6XLPM with mirror scale, Cat. No. 12211. 198.00

250, 255, 260 and 270 Specifications



RANGES	250	255	260-7, 260-7M, 260-7RT, 260-7MRT, 260-7P 260-7PM, 260-7PRT	260-6XL, 260-6XLM, 260-6XLP, 260-6XLPM	270-5
DC Volts	0-0.050; 0-0.250; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-0.050; 0-0.250; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-1000	0-.250; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-0.250; 0-1; 0-2.5; 0-10; 0-25; 0-100; 0-250; 0-500; 0-1000	0-0.250; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000
AC Volts	0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-2.5; 0-10; 0-50; 0-250; 0-1000	0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-2.5; 0-10; 0-25; 0-100; 0-250; 0-500; 0-1000	0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000
DC Microamperes	0-50 (both 50 and 250 mV drop)		0-50 (250 mV drop)		
DC Milliamperes	0-1; 0-10; 0-100; 0-500 (50 mV drop)		0-1; 0-10; 0-100; 0-500 (250; 255; 300; 500 mV drop)	0-0.5; (250 mV drop); 0-5, 0-50 (252 mV drop); 0-500 (400 mV drop)	0-1; 0-10; 1-100; 0-500 (250; 255; 300; 500 mV drop)
DC Amperes	0-10 (50 mV drop)	None	0-10 (250 mV drop)	0-5 (250 mV drop)	0-10 (255 mV drop)
AC Amperes	Up to 250 AC amps with optional Amp-Clamp adapter, Model 150-2				
db Scale (1 mW 600Ω)	-20 to +10; -8 to +22; +6 to +36; +20 to +50	None	-20 to +10; -8 to +22; +6 to +36; +20 to +50	-20 to +10; -9 to +21; -1 to +29; +11 to +41; +19 to +49	-20 to +10; -8 to +22; +6 to +36; +20 to +50
Output	None 0.1 mfd capacitor in series with all AC voltage ranges through 250 volts				
Conventional Resistance	RX1, 0-2000 Ω (12 Ω center); R100, 0-200 kΩ (1200 Ω center); RX10k, 0-20 MΩ (120 kΩ center)		RX1, 0-1k (6 Ω center); RX100, 0-100k (600 Ω center); RX1k, 0-1M (6 kΩ center); RX10k, 0-10M (60 kΩ center)		
Low-Power Resistance	None		None		
Temperature	None	+100°F to +1050°F	None	None	None

ACCURACIES	250	255	260-7, 260-7RT	260-7M 260-7MRT	260-7P, 260-7PM, 260-7PRT	260-6XL, 260-6XLM	260-6XLP 260-6XLPM	270-5
0-50 mV; 0-250 mV 0-1 to 0-1000 V DC	±2% fs	±2% fs	±2% fs	±2% fs	±2% fs	±2% fs	±2% fs	±1.25% fs
0-50 μA	±1% fs	±1% fs	±1.5% fs	±1.5% fs	±1.5% fs	1.5% fs	1.5% fs	±0.75% fs
0-0.5 mA to 0-10 A DC	—	—	—	—	—	—	±2% fs	—
0-1 mA to 0-10 A DC	±2% fs	±2% fs	±2% fs	±2% fs	±2% fs	—	—	±1.25% fs
RX1 (L.P.); RX10 (L.P.)	—	—	—	—	—	±2.5° of arc	±2.5° of arc	±1.25% fs
RX1 Conventional	±2.5° of arc	±2.5° of arc	±2.5° of arc	±2.5° of arc	±2.5° of arc	±2.5° of arc	±2.5° of arc	±1.5° of arc
RX100 Conventional	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±1.0° of arc
RX1k Conventional	—	—	—	—	—	±2.0° of arc	±2.0° of arc	—
RX10,000 Conventional	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±2.0° of arc	±1.0° of arc
0-2.5 to 0-1000 V AC	±3% fs	±3% fs	±3% fs	±3% fs	±3% fs	±3% fs	±3% fs	±2% fs

GENERAL SPECIFICATIONS

Input Impedance	All 20,000 Ω/V DC, 5,000 Ω/V AC							
Movement Type	All Taut-Band Self-Shielding Annular Type Movements							
Amp-Clamp Direct Reading Scales	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Movement Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resettable Circuit Protection	No†	No†	No†	No†	Yes**	No	Yes**	No†
Mirror Scale	No	No	No	Yes	No	No	No	Yes

Scale Length: All 4.2" scale. Dimensions: All 5-1/4 x 7 x 3-1/8". Weight: All approximately 3 lbs.

**Except on 500 V AC/DC 1000 V AC/DC, and DC amps

†Amp fuse limits maximum current

260® FAMILY ACCESSORIES for Simpson 250, 255, 260 and 270 VOMs



Accessories	For 250, 255, 260-3-4-5-6, XL 270-1-2-3-4	For 260 Series	Price
(A) Solid-State Temperature Probe	00758	00758	\$115.75
(B) Thermocouple Temperature Adapter	00760	00760	103.00
(C) Model 150-2 Amp-Clamp Adapter	00541	00545	51.00
(D) 40 kV DC Probe	00168	00411	42.00
10 kV DC Probe	00034	00412	42.00
10 kV AC Probe	00036	00413	42.00
(E) 5 kV DC Probe	00795	00795	14.50
5 kV AC Probe	00794	00794	14.50
(F) Low Power Ohms Probe	00735	00414	53.75
(G) Extra Test Leads with screw-on clips	00125	00043	9.50
Extra Probe Tip Leads	07538	—	8.25
Alligator Clip Leads	07500	—	7.25
(H) Roll Top Case (00249 for -3, -4, -5)	00248†	00248	27.90
(I) Leatherette Case with storage space	00549	00549	40.75
(J) Molded Top Hinged Case	00812	00812	36.00
(K) Leatherette Ever-Redy Hard Case	00805	00805	36.00
Vinyl Sheath Case	01818	01818	29.50
Molded Snap-On Front Dust Cover (Pkg. 10*)	02163*	02163*	32.00
(L) Model 151-2 Line Splitter (for 150)	00544	00544	15.00
(M) Standard Test Lead System (16 pcs.)	05577	05577	32.50
(N) Deluxe Test Lead System (23 pcs.)	00818	00818	57.00

*Available in single units or in quantity at distributors

†Not for XL Series



Volt-Ohm-Milliammeters



Model 270-5 Extra-High Accuracy Volt-Ohm-Milliammeter

- Excellent repeatability
- Greater accuracy over a wide temperature range
- DC V accuracy: $\pm 1.25\%$ fs
- AC V accuracy: $\pm 2\%$ fs
- Resistance accuracy: $\pm 1\frac{1}{2}^\circ$ arc

Model 270-5 includes all the popular features of the world famous 260-7M* including a mirrored scale and knife-edge pointer, varistor-protected self-shielding taut-band movement, external-access battery compartment and Adjust-A-Vue handle.

In addition, special calibration circuits and components are combined with Simpson's regular, strict manufacturing controls. The result is an instrument with proven dependability and ruggedness, plus the higher accuracy necessary for production and laboratory applications.

Complete with batteries, test leads and manual.

MODEL 270-5, Cat. No. 12226

MODEL 270-5RT in roll-top protective case, Cat. No. 12227

\$145.00

165.00

Model 255 VOM With Temperature Range

Designed by Simpson to meet the specific needs of servicemen in the gas and electric heating and appliance fields. Has temperature range of $+100^\circ\text{F}$ to $+1050^\circ\text{F}$. Low millivolt drop on DC current ranges for servicing solid-state controls.

Complete with operator's manual, color-coded test leads with screw-on clips, 5-ft. 1/C thermocouple lead, and batteries.

MODEL 255 VOM, Cat. No. 12155	\$152.00
SPECIAL CARRYING CASE FOR 255, Cat. No. 00549	40.75
PROBE CASE, snaps onto above carrying case, Cat. No. 00574	12.25
EXTRA THERMOCOUPLE LEAD, Cat. No. 00163	14.75



#00574
Probe Case



#00549
Case



Combination Appliance Testing Package

Case free with Models 255, 150-2 Amp-Clamp and 151-2 Line Splitter

Versatile appliance testing in a convenient package. Purchase the 255 VOM with 150-2 Amp-Clamp adapter and 151-2 line splitter and you get a rugged #00549 case that carries the VOM, Amp-Clamp, splitter and test leads.

Cat. No. 12156 **\$218.00**



151-2



150-2



#00549 Case



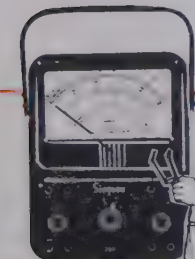
Model 255

Model 250 VOM With 50 mV Drop For solid-state circuit testing

Makes testing new solid-state circuits easier. Has 1-ampere fused input, self-shielding varistor-protected movement and Adjust-A-Vue handle which folds to use as a stand. Plus modified range coverage and 50 millivolt drop on DC current ranges... specifically for solid-state circuits. Rugged taut-band movement.

Catalog No. 12158	\$131.00
CARRYING CASE, Cat. No. 00812	36.00

#00812
Vacuum
Molded Case



SPECIAL OFFER: Free demonstrator from your distributor with purchase of 10 Simpson 260° VOMs

22" x 30" blow-up of the 260° VOM* for classroom demonstrations. Switches operate and a "Zero Ohms" knob moves the dial pointer to any scale division.

Educational Demonstrator, Catalog No. 12630

\$35.00

*FOR COMPLETE SPECIFICATIONS AND ACCESSORIES, SEE OPPOSITE PAGE.

Simpson Telephone-Industry Test Sets



MODEL 14510 VOM

SPECIFICATIONS (at reference temperature: 25°C ± 2°)

DC VOLTS		Accuracy	Sensitivity
Range			
0.3 V		± 2% full scale	20,000 ohms per volt
3 V			
12 V			
60 V			
300 V			
600 V			

AC VOLTS		Frequency Response	Accuracy	Sensitivity
Range				
3 V		20-100 kHz ± 1%	± 3% full scale	3000 ohms per volt
12 V		20-100 kHz ± 1%		
60 V		20-40 kHz ± 1%		
300 V		20-10 kHz ± 2.0%		
600 V		20-5 kHz ± 1%		

DC CURRENT		Accuracy	Full Scale Voltage Drop, Nominal
Range			
0.06 mA†		± 2 full scale	300 mV
1.2 mA			149 mV
12.0 mA			166 mV
120.0 mA			341 mV

†Terminal Resistance: 5 kΩ ± 2%

RESISTANCE		Accuracy	Open Circuit Voltage (Nominal)	Short Circuit Current (Nominal)
Range	Ohms Center Midscale			
RX1	20	± 2% of arc	1.5 V	75 mA
RX10	200		1.5 V	7.5 mA
RX100	2 k		1.5 V	.75 mA
RX1k	20 k		1.5 V	.075 mA
RX10k	200 k		30 V	.15 mA

- Designed for the Telecommunications Industry
- An Industry Standard for Over 25 Years
- Performance Enhanced by Simpson —
3-Way Instrument Protection: varistor-protected meter movement; plus both standard and high-energy fusing system on all ranges
- Sensitivity: 20,000 Ohms-per-Volt DC; 3,000 Ohms-per-Volt AC
- Temperature Compensated
- 20 Ranges Optimized for Telephone Industry Requirements
- Self-Shielding Meter Movement With Shock Absorbing P/J Construction
- Accuracy: ± 2% DC, ± 3% AC
- Single Knob Range/Function Selector
- Reverse/Recessed Safety Jacks
- UL Recognized, Safety-Engineered Test Leads with Insulated Prod Tips and Screw-On Alligator Clips
- Rugged, Impact-Resistant, Custom-Molded Fire-Retardant ABS Case

GENERAL

Rated Circuit-to-Ground Voltage: 600 V AC/DC maximum

Overload Protection: Meter movement protected by varistor.

Temperature/Accuracy: The change in accuracy due to a temperature change of ± 20°F from 77°F (57°F-97°F) does not exceed ± 0.8% for DC volts, ± 1.0% for DC current and ± 1.5% for AC voltage

Instrument Position: Calibration and reading accuracies specified are for the instrument in a horizontal position

Scale Length: 4.2"

Batteries: Single 1.5 NEDA-type 13F, two 15 V NEDA-type 208

Test Leads: One pair, 4 ft. long, test prods with insulated alligator clips

Size: 5-1/4 x 7 x 3-1/8" **Weight:** 3 lbs.

MODEL 14510 VOLT-OHM-MILLIAMMETER, complete with batteries, test leads and operator's manual, Catalog No. 12383 **\$155.70**

ACCESSORIES

EXTRA UR TEST LEAD SET, Catalog No. 00043 **9.50**

OFFICIAL FIELD CARRYING CASE. Vinyl Ever-Redy type with tool and test lead storage compartment, Catalog No. 00549 **40.75**

MOLDED VINYL HINGED-TOP CASE, Catalog No. 00812 **36.00**

VINYL EVER-REDY CASE, Catalog No. 00805 **36.00**

VINYL SHEATH CASE, Catalog No. 01818 **27.50**

SOLID-STATE TEMPERATURE PROBE, Catalog No. 00758 **115.75**

THERMOCOUPLE TEMPERATURE ADAPTER, Catalog No. 00760 **103.00**

MODEL 150-2 AMP CLAMP ADAPTER, Catalog No. 00545 **51.00**

MODEL 151-2 LINE SPLITTER (for 150-2), Catalog No. 00544 **15.00**

40 kV DC PROBE, Catalog No. 00411 **42.00**

10 kV DC PROBE, Catalog No. 00412 **42.00**

5 kV DC PROBE, Catalog No. 00795 **14.50**

Prices and Specifications Are Subject to Change Without Notice

MODEL 8455 LINE LOOP TESTER Industry Standard for Over 25 Years



- Standard of the Telecom Industry for Over 25 Years
- Checks Line Shorts, Opens and Multiple Ringers
- Measures DC Voltage and Resistance
DC Voltage: 0 to 100 V
Resistance: R X 1 (1 MΩ center scale), R ÷ 10
- Reverse Switch for Line Checks
- 0 to 100 Points Scale Calibration
- Compact 5-1/2" x 3-5/8" x 2-3/8"

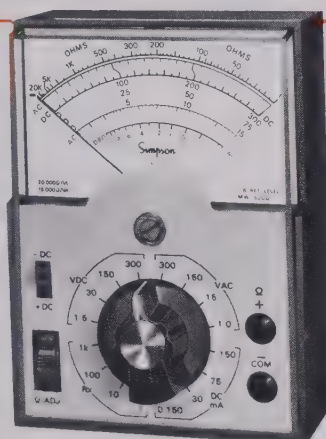
MODEL 8455 VOLT-OHMMETER, complete with test lead set, batteries and operator's manual, Catalog No. 12382 **\$110.00**

ACCESSORIES

EXTRA TEST LEAD SET, Catalog No. 00237 **9.50**
CARRYING CASE, Catalog No. 00824 **15.00**



MODEL 16979 Handi-VOM Compact VOM with Full-Size Performance



- Ideal for Telephone Field Service
- Fits into Pocket or Tool Case
- Official Neck-Strap Case Available for "Hands-Free" Field Use
- 20 Ranges Optimized for Telephone Industry Requirements
- Sensitivity: 20,000 Ohms-per-Volt DC; 15,000 Ohms-per-Volt AC
- Full Scale Accuracy: $\pm 2\%$ DC, $\pm 3\%$ AC
- Full-Size Reverse/Recessed Safety Jacks
- Full-Size UL Recognized, Safety-Engineered Test Leads with Prod Tips and Screw-On Insulated Alligator Clips
- Single Knob Range/Function Selector
- Front Panel Polarity Reversing Switch
- Drop Resistant, Varistor Protected Meter
- Self-Shielding, Taut-Band Meter Movement
- Rugged, Impact-Resistant, Custom-Molded, Fire-Retardant ABS Case
- Compact 4-9/16 x 3-5/16 x 1-3/4". Weighs 12 ounces

MODEL 16979 COMPACT HANDI-VOM, complete with batteries, test leads and manual, Catalog No. 12384 **\$123.40**

ACCESSORIES

EXTRA UR TEST LEAD SET, Catalog No. 00043 **9.50**
STRAP CASE, Catalog No. 02936 **21.95**
VINYL CASE, Catalog No. 02225 **22.50**
SOFT VINYL CASE, Catalog No. 02935 **10.75**
MOLDED HARD CASE, Catalog No. 02929 **37.00**

SPECIFICATIONS (at reference temperature: 25°C $\pm 2^\circ$)

DC VOLTAGE		Accuracy	Sensitivity
Range			
100 V		$\pm 2\%$ full scale	1000 Ω/V

RESISTANCE		Accuracy	Open Circuit Voltage (Nominal)	Short Circuit Current (Nominal)
Range	Ohms Center Midscale			
X1	1 MΩ	$\pm 2^\circ$ of arc	45 V	0.45 mA
$\div 10$	100 kΩ		45 V	4.5 mA

SPECIFICATIONS

Rated Circuit-to-Ground Voltage: 100 volts DC maximum
Overload Protection: All ranges fuse protected (1/100 A, 250 V)
Temperature/Accuracy: The changes in accuracy due to a temperature change of 57°F-97°F does not exceed $\pm 2\%$ for DC volts.
Instrument Position: Calibration and reading accuracies specified are for the instrument in a horizontal position.
Battery: One Eveready #455 (45 volts)
Test Leads: 1 pair, battery clip style, 6 ft. long
Size: 5-1/2" x 3-5/8" x 2-3/8" **Weight:** 1 lb.

SPECIFICATIONS (at reference temperature: 25°C $\pm 2^\circ$)

DC VOLTS			
Range	Accuracy	Sensitivity	
1.5 V	All	20,000 ohms per volt	
30 V	$\pm 2\%$		
150 V	full scale		
300 V			

AC VOLTS Range	Frequency Response	Basic Accuracy*	Sensitivity
1 V	20 Hz-50 kHz $\pm 1\%$	$\pm 3\%$ full scale	15,000 ohms per volt
15 V	20 Hz-3 kHz $\pm 1\%$		
150 V	20 Hz-100 Hz $\pm 1\%$		
300 V	20 Hz-100 Hz $\pm 1\%$		

*Basic Accuracy: (50-60 Hz)

DC CURRENT			Full Scale Voltage Drop (Nominal)
Range	Accuracy % of F.S.		
150 μ A	$\pm 3\%$ full scale		250 mV $\pm 2\%$
30 mA			260 mV Nom.
75 mA			270 mV Nom.
150 mA			270 mV Nom.

RESISTANCE		Accuracy	Open Circuit Current (Nominal)	Short Circuit Current (Nominal)
Range	Ohms Center (Midscale)			
X1	200 ohms	$\pm 2\%$ of arc	1.5 V	7.5 mA
X10	2000 ohms		1.5 V	0.75 mA
X100	20 kΩ		1.5 V	0.075 mA
X1 k	200 kΩ		15 V	0.075 mA

dB RANGE

- 10 dB to + 2 dB, $\pm 4\%$. Reference level, 1 mW, 600 Ω @ 1000 Hz

GENERAL

Rated Circuit-to-Ground Voltage: 300 volts AC/DC maximum
Instrument Position: Calibration and reading accuracies specified are for the instrument in a horizontal position
Batteries: One 1.5 V NEDA-type 15F, one 15 V NEDA-type 220
Test Leads: One pair, 4 ft. long with test prods and screw-on insulated alligator clips
Size: 4-9/16 x 3-5/16 x 1-3/4" **Weight:** 12 oz.

Compact Handi-VOMs

Low-Cost MODEL 165 HANDI-VOM

The new Model 165 volt-ohm-milliammeter is pocket sized, yet has full size VOM ranges, functions and features. A large, easy-to-read 3-1/4" meter with 2-color scale plus a knife-edge pointer provide excellent resolution, and 22 ranges achieve full measurement capability for AC/DC voltage, DC current, resistance and dB (4 ranges). A single switch selects all functions and ranges, except the 1000 V AC and DC ranges which are on separate input jacks. Full scale accuracy is $\pm 3\%$ DC and $\pm 4\%$ AC. Complete with color-coded probe tip test leads, ohmmeter batteries and operator's manual. Catalog No. 12143. **\$78.00**



160 HANDI-VOM — Drop and Shock Resistant Meter

Only 3-1/16" wide. 12 ounces in weight, yet has the $\pm 2\%$ DC and $\pm 3\%$ AC accuracy and sensitivity of a full size VOM. The self-shielding taut-band movement features outstanding repeatability and freedom from stray magnetic fields. And the meter movement is varistor protected. Built for today's VOM needs, including solid-state circuit testing, the 160 has a 0.25 V DC range. Complete with probe tip test leads, batteries and operators manual. Catalog No. 12271 **\$100.00**

SPECIFICATIONS	Model 160	Model 165
Ranges—DC Volts	0-0.25, 1.0, 2.5, 10, 50, 250, 500, 1000	0-2.5, 10, 50, 250, 1000
AC Volts	0-2.5, 10, 50, 250, 500, 1000	0-2.5, 10, 50, 250, 1000
DC Microamperes	0-50	N.A.
DC Milliamperes	0-1, 10, 100, 250, 500	0-.5, 50, 500
DB Scale (1 mW into 600 Ω)	-20 to +10, -8 to +22, +6 to +36, +20 to +50	
DC Resistance	R X 1 (30 Ω center), R X 10, R X 100, R X 1k, R X 10k	R X 1 (200 Ω center) R X 10, R X 100, R X 1 k
Accuracy—DC	$\pm 2\%$	$\pm 3\%$
AC	$\pm 3\%$	$\pm 4\%$
Sensitivity—DC	20,000 Ω /volt	
AC	5,000 Ω /volt	
Movement Type	Taut-Band	
Scale Length	3.0"	
Dimensions	4-9/16" x 3-5/16" x 1-3/4"	
Weight	12 ounces	

02929 Case



02936 Case



ACCESSORIES

STRAP CASE, Cat. No. 02936	\$19.25
LEATHERETTE CASE, Cat. No. 02225	22.50
SOFT VINYL CASE, Cat. No. 02935	10.75
MOLDED HARD CASE, Cat. No. 02929	37.00
150-2 AMP-CLAMP ADAPTER, No. 00541	51.00
ADAPTER PLUG connects Model 150-2 to Model 160 or 165 VOM, Catalog No. 02056	4.00
EXTRA PROBE TIP LEADS, Catalog No. 02055	7.00
EXTRA ALLIGATOR CLIP LEADS, Cat. No. 01927	6.75

02935 Case



Test Leads



Adapter Plugs



150-2 Amp-Clamp



02225 Case

AC Leakage Tester

MODEL 229 Series 2 Conforms with ANSI and UL Safety Standards

For industry, lab and production. Designed to measure AC leakage current in 120 V and 240 V AC appliances and electrical equipment in accordance with American National Standards Institute Standard C101.1-1973 "Leakage Current for Appliances," and UL 1244 "Standard for Electrical and Electronic Measuring and Testing Equipment."

SPECIFICATIONS

Ranges: AC current: 0-0.3-1-3-10 mA; AC voltage: 0-150 and 0-300 volts; Battery Test: Replace—Good

Short Test: Current Red arc: 30 mA fs Green arc: 10 mA or less

Resolution: 5 μ A on 0-0.3 mA range

Accuracy: $\pm 3\%$ at 60 Hz

Input Impedance: Input impedance for current tests is 1500 ohms in parallel with 0.15 mfd

Input Resistance: 0.5 and 1.0 M Ω on the 150 V and 300 V ranges, respectively

Accuracy vs. Frequency: Approximates Dalziel's "Percentile 50 Threshold of Perception Curve within ± 1.0 dB"

Overload Protection: Protected up to 360 V AC momentary on all ranges

Size: 7" x 5-1/4" x 3-1/8" **Weight:** 3 lbs.



Ever-Ready Case 00805

MODEL 229-2, with test leads, battery and operator's manual, Cat. No. 12267	\$173.00
LEATHER CARRYING CASE, Catalog No. 00805	36.00

Industrial Volt-Ohm-Milliammeters

MODEL 265 Industrial VOM



#00805
Case



#01818
Case



#00249
Case

- Single switch operation
- AC and DC currents to 12 amps
- Simultaneous measurements of AC voltage and current

Also measures AC and DC voltages to 600 V. Four resistances (12 Ω center): R X 1, R X 100, R X 1k, R X 10k. Rugged, self-shielded taut-band movement, temperature compensated, provides high resolution and repeatability. Uses same accessories as Simpson 260[®]6 family of VOMs. Complete with test leads, batteries and operator's manual.

MODEL 265, Catalog No. 12184	\$215.00
FLEXIBLE PROBE, w/retractable grip-tip, Catalog No. 00118	9.00
40 kV DC PROBE, No. 00168	42.00
MODEL 150-2 AMP-CLAMP ADAPTER, Catalog No. 00541	51.00
VINYL EVER-REDY CASE, Catalog No. 00805	36.00
VINYL SHEATH CASE, Catalog No. 01818	29.50
ROLL TOP CASE, Catalog No. 00249	27.90
LINE SPLITTER, Catalog No. 00544	15.00

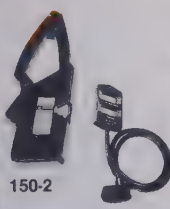
SPECIFICATIONS

DC Voltage		DC Current		Ohms	Test	
Ranges		Ranges			Voltage	Current
0.3 V, 3 V, 12 V, 60 V, 300 V, 600 V		60 μ A, 1.2 mA, 12 mA, 120 mA, 0.6 A, 1.2 A, 12 A		Ranges: R X 1 (12 Ω ctr.) R X 100 R X 1k R X 10k	1.5	125 mA
Accuracy	$\pm 2\%$ fs	Voltage Drop			1.5	1.25 mA
Sensitivity	20,000 Ω /V	250 mV max. $\pm 2\%$ fs				
AC Voltage		AC Current				
Ranges		Ranges: 120 mA				
3 V, 12 V, 60 V, 300 V, 600 V		750 mV 1.2 A				
Accuracy	$\pm 3\%$ fs	65 mV 12 A				
Sensitivity	5000 Ω /V	50 mV Accuracy		7.5	72.5 μ A	
		Voltage Drop				
		60 Hz				

Accuracy: $\pm 2\%$ of arc



265



150-2



151-2



00549 Case

Combination Industrial Testing Package

Case free with Model 265, 150-2 Amp-Clamp and 151-2 Line Splitter

Versatile, industrial electrical testing capability in a grab-and-go package. Purchase the Model 265 VOM, 150-2 Amp-Clamp adapter and 151-2 Line Splitter and you get a rugged #00549 carrying case along with the VOM, Amp-Clamp, Splitter and test leads. Catalog No. 12185

\$281.00

MODEL TS-111-3 Railroad Multi-Tester

- Measure AC-DC current, AC-DC voltage, and resistance—all with one rugged instrument
- Measure percent "on" time of coded track pulses—with readout directly in percentage
- Measure AC voltages—even when AC is superimposed on DC track signals
- Measure resistance—without fear of meter burn-out. Special circuit warns operator if power is present.
- Measure peak current—with no pointer oscillation, no guesswork. Built-in pointer stop is adjustable from the front panel.

MODEL TS-111-3, with battery, 5-ft. test leads, leather carrying case and operator's manual, Catalog No. 12183

\$345.00

REPLACEMENT CARRYING CASE, Catalog No. 00719

44.00

REPLACEMENT TEST LEADS, Catalog No. 00236

9.25



#00719
Case

RANGES

DC Voltage: 0-0.6, 3, 15, 60, 300 volts (at 1000 Ω /V sensitivity)

AC Voltage: 0-3, 15, 150, 600 volts (at 300 Ω /V sensitivity)

DC Current: 0-15, 60, 300 milliamperes; 0-1.5, 6, 30 amperes

AC Current: 0-3, 30 amperes

Resistance: 0-100 (5 at center scale), 0-10,000 (500 at center scale) ohms

ACCURACIES

DC Ranges: $\pm 2\%$ of full scale (0-3 DC volt range: $\pm 1\%$ of full scale)

AC Ranges: $\pm 3\%$ of full scale (sine wave, including AC voltages up to 100 volts which are superimposed on up to a 20% DC signal)

Resistance Ranges: Within $\pm 5\%$ of reading at center scale (within $\pm 10\%$ of reading at extreme low and high portions of the scale)

Percent "On" Range: $\pm 2\%$ of full scale for 10-60% "On" time (at 30 pulse rate); $\pm 2\%$ of full scale for 10-100% (at 180 pulse rate)

INSERTION LOSS

DC Ranges: 60 millivolt drop (maximum)

AC Ranges: 90 millivolt drop (maximum) on 0-3 amp range; 135 millivolt drop (maximum) on 0-30 amp range. (At 60 Hz sine wave)

Percent "On" Time: 0-100% (for pulses over 30 per minute)

Size: 6-3/16" x 9-1/2" x 4-1/2" (with case)

Weight: 4-1/4 lbs. (with case)

Simpson 7" Scale Volt-Ohm-Milliammeters



MODEL 269 Series 3

- 100,000 Ω/V Sensitivity

Now improved! With self-shielding taut-band meter movement that gives better repeatability, plus faster pointer action. This new meter movement is combined with a new mirror scale and knife-edge pointer, eliminating parallax errors. Large, readable scale is over 6 inches long. Accuracy is $\pm 1\frac{1}{2}\%$ DC and $\pm 2\frac{1}{2}\%$ AC, with new range coverage, too. One switch selects all 27 ranges.

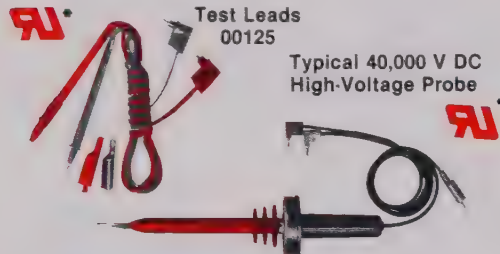
Battery replacement is quick and easy with the snap-on compartment. The 269-3 is protected from overloads with a replaceable 1.5 ampere fuse at the input, and a varistor at the meter movement. Complete with No. 00125 test leads, 4000 volt DC probe extension and operator's manual.

MODEL 269-3, Catalog No. 12192 **\$218.00**
40 kV DC PROBE, Catalog No. 00066 **42.00**

Popular MODEL 262 Series 3

Popular 7" VOM has 34 ranges, movement overload protection and more. See specifications below. Complete with No. 00125 test leads, 4000 volt DC probe extension, batteries and manual.

MODEL 262-3, Catalog No. 12182 **\$187.00**
40 kV DC PROBE, Catalog No. 00121 **42.00**
VINYL CASE, Catalog No. 05262 **32.00**



#05262
Case

SPECIFICATIONS	Model 269-3			Model 262-3		
	100,000 Ω/V DC 5,000 Ω/V AC			20,000 Ω/V DC 5,000 Ω/V AC		
RANGES:						
DC Volts	0-0.8/0-1.6/0-8/0-40/0-160/0-400/0-800/0-1600/0-4000*			0-1.6/0-8/0-40/0-160/0-400/0-800/0-1600/0-4000*		
AC Volts	0-3/0-8/0-40/0-160/0-400/0-800			0-3/0-8/0-40/0-160/0-400/0-800		
DC Microamperes	0-16/0-160			0-80/0-160		
DC Milliamperes	0-1.6/0-16/0-160			0-1.6/0-16/0-160		
DC Amperes	0-1.6/0-8			0-1.6/0-8		
dB Scale (L1MW-600)	-12 to +45.5 dB in four ranges			-12 to +45.5 dB in four ranges		
Output Ranges	External 0.1 mfd. capacitor required where DC is present			0.1 mfd. capacitor in series with all AC voltage ranges through 160 volts		
Resistance Ranges	R X 1 0-200 Ω	R X 10 0-20 k Ω	R X 100 0-200 k Ω	R X 1 0-500 Ω	R X 10 0-5000 Ω	R X 100 0-50 k Ω
	R X 1 k 0-2 M Ω	R X 10 k 0-20 M Ω (12 Ω Center)	R X 100 k 0-200 M Ω	R X 1 k 0-500 k Ω	R X 10 k 0-5 M Ω (4.5 Ω Center)	R X 100 k 0-50 M Ω
ACCURACIES:						
DC Volts	0-1.6 to 1600 $\pm 1\frac{1}{2}\%$; 0-4000 $\pm 3\frac{1}{2}\%$			$\pm 2\%$ 0.16 to 1600; $\pm 3\%$ 0-4000		
AC Volts	$\pm 2\frac{1}{2}\%$			$\pm 3\%$		
DC Current	$\pm 1\frac{1}{2}\%$			$\pm 2\%$		
Resistance	$\pm 2^\circ$ of arc			$\pm 2.5^\circ$ of arc		
Mirror Scale	Yes			—		
Scale Length	6.2"			6.2"		
Dimensions	6" x 7 $\frac{1}{4}$ " x 3 $\frac{3}{4}$ "			6" x 7 $\frac{1}{4}$ " x 3 $\frac{3}{4}$ "		
Net Weight	3 $\frac{1}{4}$ lbs.			3 $\frac{1}{4}$ lbs.		

Simpson Compact "Micro-Testers"



Model 372



Model 230-3



Model 362



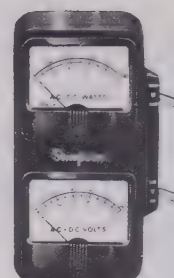
Model 373



Model 379



Model 390-2



Model 392



Compact rugged instruments. Perfect in the field and for laboratory testing and measurement. All have rugged phenolic cases and measure approximately 3 x 5-7/8 x 2-1/2". Weigh 1-1/2 lbs. Micro-Testers not illustrated are similar in appearance to these shown.

MODEL	DESCRIPTION	RANGES	PRICE
230-3 AC/DC VOM	One of the smallest AC and DC service instruments. Specifically designed for telephone, teletype and marine use. Excellent troubleshooter. Complete with test leads No. 08375 and operator's manual. Catalog No. 12142	1,000 Ohms per Volt AC-DC. Voltage Ranges: DC: 10 V; 50 V; 250 V; 500 V. AC: 10 V; 250 V; 500 V. Current Ranges: DC: 10 mA; 50 mA; 250 mA. Resistance Ranges: 0-1000 Ω ; 0-100 k Ω . Accuracies: DC volts $\pm 3\%$ fs; AC volts $\pm 4\%$ fs; DC resistance $\pm 3\%$ of linear arc from absolute value of resistance measured	\$ 89.00
362-2 Low- Ohmmeter	The two ranges are essentially linear and permit highly accurate readings between 0.1 and 25 ohms. For checking motor armatures; switch and relay contact resistances; shorts between windings and grounds in radio chassis wiring; electrical equipment. Complete with calibrated test leads No. 08376. Catalog No. 12281	Ranges: 0-5, 0-25 ohms Accuracy: $\pm 3\%$ of linear arc length	82.00
370 AC Ammeter	Ideal for checking small motors, line loads where AC current measurements are required. 60 Hz. Self-contained current transformer. Catalog No. 12290	Ranges: 0-1, 0-2.5, 0-5, 0-10, 0-25 amperes Accuracy: $\pm 3\%$ of full scale	79.00
371 AC Voltmeter	Designed primarily for testing line voltages applied to motors, heating equipment and many other industrial applications. Catalog No. 12300	Ranges: 0-150, 0-300, 0-600 volts Accuracy: $\pm 3\%$ of full scale, 50/60 Hz	79.00
372-2 Ohmmeter	Provides wide range of resistance measurements in a small package. 0.2 ohm to 50 megohms. Ideal for use in schools, on test benches or at inspection facilities. Complete with test leads No. 08375 and operator's manual. Catalog No. 12311	Ranges: 0-500, 0-5000, 0-50,000, 0-500,000 ohms; 0-5, 0-50 megohms. Center Scale: 5, 50, 500, 5,000, 50,000, 500,000 ohms. Accuracy: $\pm 3^\circ$ of linear arc length	82.00
373 DC Milliammeter	General purpose tester. Valuable in a number of applications. Provides DC current measurements from .02 to 1000 mA. Catalog No. 12320	Ranges: 0-1, 5, 10, 25, 50, 100, 250, 500, 1000 mA. Accuracy: $\pm 3\%$ of full scale	79.00
374 DC Microammeter	Can be used with external resistors or multipliers as high sensitivity voltmeter at 20,000 ohms per volt. Can be shorted out of circuit by use of selector knob. Catalog No. 12330	Ranges: 0-50, 100, 250, 500, 1000 micro-amperes. Accuracy: $\pm 3\%$ of full scale	79.00
375 DC Ammeter	Provides complete range from a fraction of an amp to 25 amps without external shunts. Ideal unit for use with unmetere power supplies. Catalog No. 12340	Ranges: 0-1, 2.5, 5, 10, 25 amperes Accuracy: $\pm 3\%$ of full scale	79.00
376 AC Voltmeter	Rectifier type, 1000 ohms per volt. Useful in circuits where limited current is present. An excellent output meter when used with proper condenser. Catalog No. 12350	Ranges: 0-5, 10, 25, 50, 100, 250, 500, 1000 AC volts. Accuracy: $\pm 3\%$ of full scale	79.00
377-2 DC Voltmeter	Resistance, 1000 ohms per volt. Useful in radio servicing and industrial applications. Catalog No. 12361	Ranges: 0-1, 2.5, 5, 10, 25, 50, 100, 250, 500, 1000 DC volts. Accuracy: $\pm 3\%$ of full scale.	79.00
378 AC Milliammeter	Five separate ranges. Typical applications are transformer vacuum tube tests. Contains current transformer and indicating instruments in one case. Catalog No. 12370	Ranges: 0-5, 25, 100, 250, 1000 ma Accuracies: $\pm 5\%$ of full scale	79.00
379 Battery Tester	Provides accurate indications of condition of all standard flashlight, hearing aid (mercury cells), radio batteries. Complete with test leads No. 08375 and operator's manual. Catalog No. 12380	Ranges: 0-1.5, 4.5, 6.0, 7.5, 9.0, 15.0, 22.5, 30.0, 45.0, 67.5, 90.0 V Load Resistance: within $\pm 5\%$	79.00
390-2 AC Volt-Amp- Wattmeter	The most popular tester for AC/DC volts, AC amps and AC watts with one meter. Rugged... useful for practically any appliance. Complete with break-in cord and operator's manual. Catalog No. 12481	AC/DC Volts: 0-150, 300. AC Amps: 0-3, 15. Watts: 0-300, 600, 1500, 3000 (50-133 Hz) Accuracy: $\pm 5\%$ of full scale	160.00
392 AC/DC Volt- Wattmeter	Simultaneous readings of volts and watts. Has separate meters, built-in cord and plug for connection to line outlet. Separate switches for range selection. Supplied with cord, plug and operator's manual. Catalog No. 12500	5,000 Watts Maximum AC or DC Range Volts: 0-130, 0-260. Watts: 0-1000, 0-5000. Accuracy: $\pm 3\%$ of full scale, $\pm 5\%$ of full scale DC volts. Frequency: 50/60 Hz or DC	160.00

ACCESSORIES

LEATHER CARRYING CASE, for all Microtesters except Model 392, Catalog No. 04299 **\$22.50**
LEATHERETTE CARRYING CASE, for all Microtesters including Model 392, Catalog No. 00831 **19.75**



#04299
Case



#00831
Case

Compact Microtesters Are Perfect for Your Tool Caddy

Electronic Volt-Ohm-Milliammeters



MODEL 303-3XL Solid-State FET VOM

A versatile, portable multimeter for field and factory electronic servicing as well as design and components testing. High input impedance, high sensitivity and drift-free performance. Other features:

- High impact shock-resistant case
- Conventional and low-power ohms selection
- Simplified, easy-to-read dial permits making nearly all measurements on the same scale
- Switch-selectable zero center scale for nulling
- Automatic LED "polarity" and "power on" indicator lights
- Single self-contained rechargeable nickel-cadmium "D" cell (G.E. type GC3 or equiv.), up to 20 hours of continuous operation, VOM can be AC line operated with AC charger/adaptor supplied

SPECIFICATIONS

AC/DC Voltage Ranges: 0.03, 0.1, 0.3, 1, 3, 10, 30, 100 and 300. 1000 V AC and 1000 V DC fs available through separate jacks

AC/DC Current Ranges: 30 μ A, 1 mA and 30 mA fs 1 A, 10 A available through separate jacks

Low-Power and Standard Resistance Ranges: R X 1, R X 10, R X 100, R X 1k, R X 10k, R X 100k, R X 1M; 10 Ω center scale

Decibel (dB) Ranges: -30, -20, -10, 0, +10, +20, +30, +40, +50, +60

Accuracy: $\pm 2\%$ fs all DC current and voltage ranges. $\pm 3\%$ all AC current ranges and AC voltage ranges up to 100 V, 50 to 500 Hz; 4% 20 Hz to 20 kHz; 10% 2 Hz to 100 kHz AC. fs $\pm 1^\circ$ arc on L.P. ohms

Input Impedance: 10 M Ω DC, 10 M Ω AC shunted by 45 pF

Size: 5.5" x 7.2" x 3.3" (140 x 183 x 84 mm)

Weight: 2.5 lbs. (1.14 kg)

MODEL 303-3XL, complete with probe, test leads, battery, AC charger/adaptor and operator's manual.

120 V AC, Catalog No. 12250 **\$299.00**

230 V AC, Catalog No. 12251 **299.00**

ACCESSORIES

CARRYING CASE, Catalog No. 01818 **29.50**

MOLDED TOP HINGED CASE, Catalog No. 00812 **36.00**

EVER-REDY HARD CASE, Catalog No. 00805 **36.00**

40 kV HIGH-VOLTAGE PROBE, Catalog No. 00432 **51.75**

RF PROBE, Catalog No. 00433 **41.75**

ISOLATION PROBE, Catalog No. 00182 **36.00**

AC CHARGER/ADAPTER FOR 120 V AC, Catalog No. 12248 **33.00**

AC CHARGER/ADAPTER FOR 230 V AC, Catalog No. 12249 **33.00**

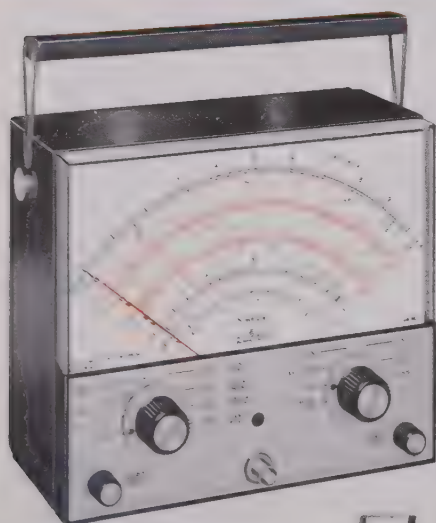


#00805
Case



#01818
Case

#00812
Case



#00577
Case



#01565
Case

MODEL 313-3 Solid-State FET VOM



11 Megohm DC Input • Battery Operated

Extra high impedance. Operates for 300 hours or more on a single set of batteries. FET-input. All voltage ranges overload protected. Large, easy-to-read 7" scale. Built-in battery test position. Self-shielding movement.

SPECIFICATIONS

Voltage Ranges: DC: 0-0.3, 0-1.0, 0-3.0, 0-10, 0-30, 0-100, 0-300, 0-1000. AC: 0-0.3, 0-1.0, 0-3.0, 0-10, 0-30, 10-100, 0-300, 0-1000 rms, 0-0.9, 0-2.8, 0-9.0, 0-28, 0-90, 0-280, 0-900, 0-2800 V peak-to-peak

Resistance Ranges: R X 1 (10 ohms center), R X 10, R X 100, R X 1k, R X 10k, R X 100k, R X 1M

Current Ranges: DC: 0-0.1 mA, 0-1.0 mA, 0-10 mA, 0-100 mA, 0-1.0 A

Accuracy: $\pm 3\%$ fs DC, $\pm 3\%$ fs AC

Input Impedance: 11 M Ω DC, 10 M Ω AC

Frequency Response (Probe switch set to AC/ Ω ma): 0.3, 1.0, 3.0 V

Ranges: ± 0.5 dB from 20 Hz to 100 kHz; 10, 30, 100 V Ranges: ± 0.5 dB from 20 Hz to 20 kHz; 300, 1000 V Ranges: flat at power line frequencies

Decibel Ranges: -10, 0, +10, +20, +30, +40, +50, +60

Size: 7-3/4" x 6-3/4" x 3-3/4"

Weight: 4.5 lbs. (2.1 kg)

MODEL 313-3, complete with DC/AC/ Ω probe, batteries, and operator's manual,

Catalog No. 12255 **\$275.00**

ACCESSORIES

VINYL CASE, Catalog No. 00577 **34.75**

SPONGE-LINED VINYL CASE, Catalog No. 01565 **40.00**

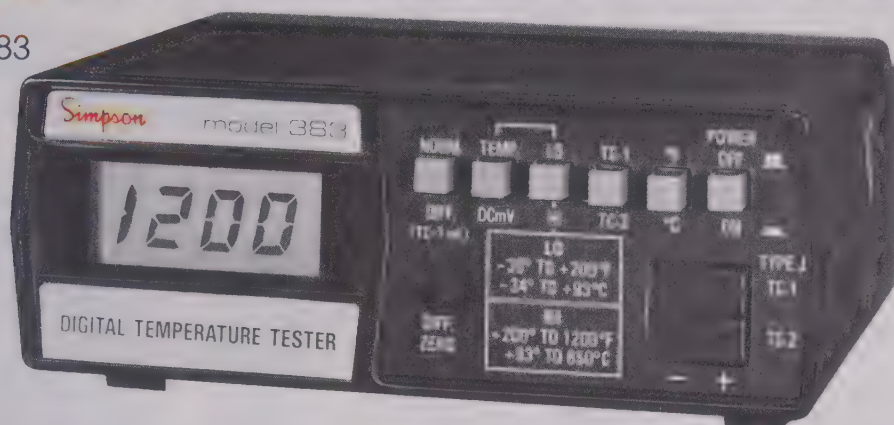
RF PROBE, Catalog No. 00191 **24.25**

40 kV PROBE, Catalog No. 00728 **42.00**

DC/AC Ω PROBE, Catalog No. 00189 **25.25**

Simpson Digital Temperature Tester

New MODEL 383



- **Dual Inputs** — Switch selectable — measure two temperature sources conveniently
- **Differential/Normal Temperature Mode** — Automatically read the difference between two temperatures or each separately. Differential mode provides for easy relative humidity determinations; ideal for heating and air conditioning servicing and environmental monitoring
- **DC Millivolt Range** — For quick check of thermocouple, flame rod and other sensor outputs
- **Chart Recorder Output** — Provides 1 mV DC per degree F or C output with low source resistance for low cost recording/controlling applications
- **Ranges:** — 30°F to +200°F (−34°C to +93°C); +200°F to +1200°F (+93°C to +650°C)
- **Switch-Selectable Centigrade or Fahrenheit Readout**
- **Large, High-Contrast, 0.5" Liquid Crystal Display**
- **Single 9 Volt Alkaline Battery**
- **Low-Cost Humidity and Self-Cleaning Oven Accessory Kits**

MODEL 383, complete with test lead set, 4" J-type temperature sensor probe, 9 V alkaline battery and operator's manual, Cat. No. 12415 . . . **\$195.00**

ACCESSORIES

- EXTRA THERMOCOUPLE LEAD. J-type, 4' lead with standard plug, Catalog No. 00391 . . . **\$12.00**
- RELATIVE HUMIDITY KIT. Includes thermocouple lead, nomograph, wicking, water dispensing items and carrying pouch, Catalog No. 02164 . . . **20.00**
- CARRYING CASE. Catalog No. 00813 . . . **26.75**
- SELF-CLEANING OVEN TEST KIT. Includes 6 throw-away thermocouples, Catalog No. 00392 . . . **20.00**

SPECIFICATIONS

TEMPERATURE FUNCTION

Ranges: — 30°F to +200°F, (−34°C to +93°); +200°F to +1200°F (+93°C to +650°C)

Instrument Accuracy: (at reference conditions): 0.2% of reading +1°C (1.8°F) from 0°F through +1000°F; ±5°F, chart correctable from −30°F through 0°F and +1000°F through +1200°F

Resolution: 0.1°F, −30°F through +200°F; 1°F, +200°F through +1200°F range

Temperature Sensor: Thermocouple, J-type (iron constantan), bead, 4' long

Maximum Allowable Thermocouple Lead Resistance: 500 ohms

Cold Junction Compensation: Automatic, from 32°F through 122°F

Compensation Accuracy: 0.1°F per 1°F ambient temperature change

Inputs: Two, switch-selected

Modes of Operation:

Normal: Probe 1 or Probe 2, switch-selected

Differential: Both probes used. Probe 1 is reference.

Instrument indicates temperature difference between Probe 1 and Probe 2

DC MILLIVOLTS FUNCTION

Range: 0 to 199.9 V

Accuracy: ± (0.1% of reading + 1 count), +20°C through +30°C

Input Resistance: 10 megohms

Resolution: 10 microvolts

Polarity Selection: Automatic. Display indicates "−" for negative polarity. Positive polarity implied.

Conversion Rate: 3 readings per second, nominal

RECORDER OUTPUT

Output: 1 millivolt per degree F or C (open circuit)

Minimum Load Resistance: 1000 ohms recommended (accurate readings possible down to 100 ohms, but with decreased battery life)

Accuracy (exclusive of recorder): Same as instrument accuracy

RELATIVE HUMIDITY

Optional relative humidity measurement kit uses wet/dry bulb temperature method. Kit includes thermocouple lead, nomograph for converting wet/dry bulb readings to relative humidity, wicking material for wet bulb sensor, water dispensing bottle (and vial) and carrying pouch

RATED CIRCUIT-TO-GROUND VOLTAGE

40 volts (DC plus peak AC) from any measuring or recording terminal to power line (earth) ground terminal

DISPLAY

3½-digit, 7 segment, ½" high, liquid crystal display (LCD) with "low battery" indication

POWER REQUIREMENTS

Battery Type: One 9-volt "transistor" battery, alkaline (NEDA 1604A) or carbon-zinc (NEDA 1604)

Battery Life: 100 hours with alkaline battery

ENVIRONMENTAL (Instrument)

Temperature:

Operating: +41°F to +104°F (+5°C to +40°C)

Storage: −40°F to +140°F (−40°C to +60°C), less battery

Humidity: 95% max., +41°F to +86°F (+5°C to +30°C); 75% max., +86°F to +104°F (+30°C to +40°C)

REFERENCE CONDITIONS

Temperature: 23°C (+73°F) ±1°C

Relative Humidity: 30 to 60%

DIMENSIONS: 2 x 5.63 x 4.6" (50.8 x 143 x 117 mm)

WEIGHT: 1.0 lb. (.453 kg)

Simpson Temperature Testers

MODEL 385-3L Temperature Meter

Three-lead model. Takes temperature readings in three different locations with a simple flick of the selector knob. Ideal for fast, accurate temperature checks from -50°F to $+70^{\circ}\text{F}$ and -45°C to $+21^{\circ}\text{C}$. Lightweight, portable, fits easily in your hand. Standard model has dual scales. Supplied with one No. 00010, 15-ft. lead and thermistor and operator's manual. Size: $3\text{"} \times 5\text{-}7/8\text{"} \times 2\text{-}1/2\text{'}$. Wt.: $1\text{-}1/2$ lbs.

Catalog No. 12420 **\$105.00**

- Range -50°F to $+70^{\circ}\text{F}$, -45°C to $+21^{\circ}\text{C}$
- Accuracy: $\pm 1^{\circ}\text{F}$ @ center scale, $\pm 2^{\circ}\text{F}$ @ either end

ACCESSORIES

SURFACE TEMPERATURE PROBE, Catalog No. 00790.....	22.50
FREE AIR TEMPERATURE PROBE, Catalog No. 00789.....	28.25
ADDITIONAL 15-ft. LEAD AND THERMISTOR, Catalog No. 00010.....	25.00
30-FT. LEAD AND THERMISTOR, Catalog No. 00216.....	25.00
50-FT. LEAD AND THERMISTOR, Catalog No. 00415.....	26.75
100-FT. LEAD AND THERMISTOR, Catalog No. 00416.....	32.50
150-FT. LEAD AND THERMISTOR, Catalog No. 00417.....	40.75
EVER-REDY VINYL CARRYING CASE, Catalog No. 08073...	24.75



MODEL 387 Millivoltmeter

For testing Furnaces • Boilers • Hot Water Heaters • Dryers
• Heaters • Refrigerators

Make gas unit servicing faster, more accurate. Use Simpson's Millivoltmeter. Place the probe across the thermocouple terminals and test for the correct value. Checks safety thermocouples on gas-fired units. Size: $3\text{"} \times 5\text{-}7/8\text{"} \times 2\text{-}1/2\text{'}$. Wt.: $1\text{-}1/2$ lbs.

Catalog No. 12440 **\$82.00**

- Range: 0-10, 0-30, 0-100, 0-300, 0-1000 millivolts
- Accuracy: $\pm 3\%$ of full scale

ACCESSORIES

TEST PRODS AND SPADE TERMINALS, Catalog No. 08379.....	8.25
ALLIGATOR CLIPS AND SPADE TERMINALS, Catalog No. 08376.....	6.75
EVER-REDY VINYL CARRYING CASE, Catalog No. 04299.....	22.50



Catalog No. 04299
for Micro-Testers

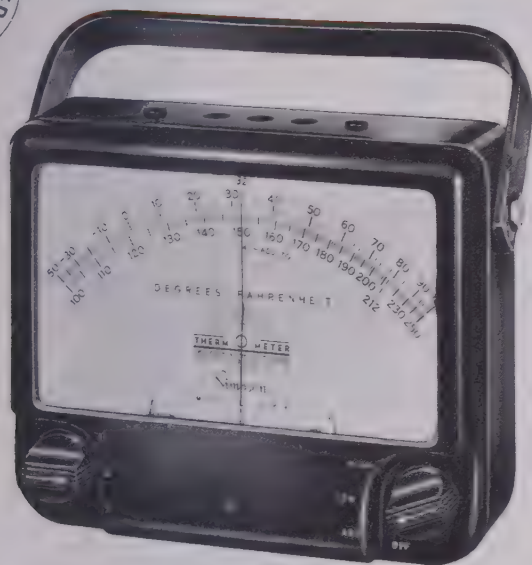


Catalog No. 08073
for Model 385-3L

Catalog No. 05262
for Models 262, 263, 267,
268, 269, 388-3L, 389-3L



Simpson Temperature Testers



MODEL 389-3L Dual-Range Therm-O-Meter

Dual-range three-lead temperature tester. Using three leads, makes temperature readings in three different locations at the same time; i.e., in a refrigerator, one lead could be connected to the evaporator plate, another to the wall of the food compartment and the third in the center of the food compartment. Centigrade and Fahrenheit scale. Supplied with one #00010 15-ft. lead and thermistor and operator's manual.

Size: 7-15/16" x 6" x 2-15/16". Weight: 4 lbs.

Catalog No. 12470 **\$180.00**

- Dual Range: -50°F to +100°F, -40°C to +35°C and +100°F to +250°F, +40°C to +120°C
- Accuracy: $\pm 2^\circ\text{F}$ center scale, $\pm 3^\circ$ at other points

ACCESSORIES

SURFACE TEMPERATURE PROBE, Catalog No. 00790.....	22.50
FREE AIR TEMPERATURE PROBE, Catalog No. 00789.....	28.25
15-FT. LEAD AND THERMISTOR, Catalog No. 00010.....	25.00
30-FT. LEAD AND THERMISTOR, Catalog No. 00216.....	25.00
50-FT. LEAD AND THERMISTOR, Catalog No. 00415.....	26.75
100-FT. LEAD AND THERMISTOR, Catalog No. 00416.....	32.50
150-FT. LEAD AND THERMISTOR, Catalog No. 00417.....	40.75
EVER-REDY LEATHER CARRYING CASE, Catalog No. 05262.....	32.00

MODEL 388-3L Therm-O-Meter

Simpson's popular wide range Therm-O-Meter tester measures the temperature of practically anything within -50°F to +1000°F. Standard model has combination °C and °F scale. Sensing Element: Thermocouple (iron-constantan). Supplied with internal battery and one 8' general purpose probe No. 00190 and operator's manual. Order additional probes as required. Size: 7-15/16" x 6" x 2-15/16".

Wt.: 3 lbs.

Catalog No. 12460 **\$194.00**

- Range: -50°F to +1000°F, -40°C to +500°C
- Accuracy: $\pm 1\frac{1}{2}$ scale divisions

ACCESSORIES

GENERAL PURPOSE THERMOCOUPLE PROBE, Catalog No. 00190.....	21.00
SURFACE TEMPERATURE PROBE (1000°F max.), Catalog No. 00187.....	26.75
RUGGED SERVICE LEAD (8 ft.), Catalog No. 00496.....	21.00
EVER-REDY VINYL CARRYING CASE, Catalog No. 05262.....	32.00

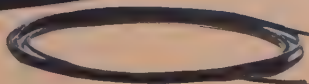
Catalog No. 00417
Thermistor Lead (150 ft.)
for Models 385-3L, 389-3L



Catalog No. 00789
for Models 388, 388-3L, 255
Thermocouple Lead



Catalog No. 00190
General Purpose Thermocouple Lead
for Models 388, 388-3L



Simpson Non-Contact Temperature Probe

New MODEL IR-10

Converts Your Simpson (or other)
DMM or VOM to Direct Temperature
Measurement



- INSTANT RESPONSE — For thermal pattern and transient phenomena measurements
- WIDE MEASUREMENT RANGE — 0° to $+600^{\circ}\text{F}$ or $+18^{\circ}$ to $+316^{\circ}\text{C}$
- TARGET SIZES DOWN TO 0.25" DIAMETER
- HIGH ACCURACY $\pm 1\%$ of range
- DOES NOT AFFECT TEMPERATURE OF OBJECT BEING MEASURED
- COMPATIBLE WITH BOTH VOMs AND DMMs
- TEMPERATURE COMPENSATED for both ambient temperature variations and source radiation effects
- 8-14 MICRON SPECTRAL RANGE — Rejects unwanted energy from sunlight, high-intensity lighting
- 10 OHM OUTPUT IMPEDANCE for low-cost recording/controlling applications
- NON-CONTACT FOR SAFER MEASUREMENT of hazardous materials, fragile objects, "life" electrical/electronic components/circuits
- MEASURES TEMPERATURE OF ROUGH OR UNEVEN SURFACES and moving or rotating objects

SIMPSON NON-CONTACT INFRARED TEMPERATURE ADAPTER, complete with 0.95-emissivity discs, adapters for reverse insulated or standard banana input jacks, 9 V alkaline battery and operator's manual,
Catalog No. 00853 **\$395.00**
SOFT VINYL CARRYING CASE, Catalog No. 02224 ... **15.00**

APPLICATIONS

Monitoring and controlling of manufacturing processes; energy conservation analysis; preventive maintenance and troubleshooting of electrical and electronic circuits; heating, refrigeration and air conditioning equipment; rotating machinery.

SPECIFICATIONS

Temperature Range: 0 to $+600^{\circ}\text{C}$ or -18° to 316°C , switch selected

Response Time: 1 second

Resolution: 1°F or 1°C (with DMM)

Accuracy: $\pm 1\%$ of range (from $+40^{\circ}$ to $+100^{\circ}\text{F}$ ambient) up through 500°F ; $\pm 1.5\%$ of range up through 600°F (chart correctable to $\pm 1.0\%$)

Repeatability: 0.5% of reading

Target Size: $1/4"$ dia. at $3/4"$ distance; $3.16"$ dia. at $10"$ distance. Target size is essentially constant from $1/4"$ to $3/4"$ distance

Measurement Distance: $1/4"$ to $10"$

Emissivity: Preset to 0.95 (suitable for most non-metallic materials and surfaces; and painted, corroded and heavily oxidized metals). 0.95-emissivity stick-on discs furnished for measurements of other objects

Field of View (ratio of measurement distance to target size): $\approx 3:1$

Probe Aperture: Cone angle: 18.9° (derived) at $3/4"$

Focal distance: calibrated at $6"$ (focal distance can vary from 4 to $6"$ distance)

Spectral Range: 8-14 microns

Output: Open circuit voltage: 1 mV per degree F or C
Impedance: typically 10 ohms. Noise: $<1\text{mV}$ peak-to-peak

Temperature Compensation: Both ambient and source radiation compensation provided

Operating Temperature: 0° to 50°C

Storage Temperature — -30°C to 60°C

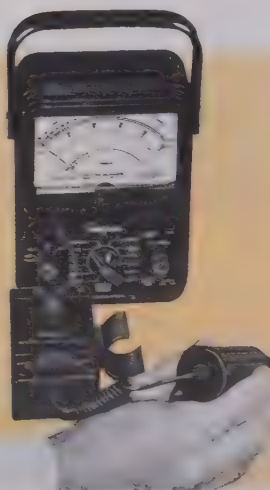
Power Source: Single 9 volt alkaline battery, NEDA 1604A

Battery Life: Continuous operation, 100 hours typical; intermittent use, 6 months typical

Size: Probe $5.4 \times 1.4"$ dia. Power supply unit, $2.5" \times 1.2" \times 4.5"$. Connecting cord, $36"$ (uncoiled)

Weight 12 oz.

For VOMs



For DMMs



Simpson AC/DC Clamp-On Ammeters



HE 94

HE 95

HE 96

Simpson HE 94
0 to 100 A true rms, Catalog No. 12496 **\$625.00**

- TRUE RMS RESPONDING, DC THROUGH 1000 HERTZ for accurate, non-contact current measurements—including non-sinusoidal and AC **plus** DC
- AUTORANGING FROM 0 THROUGH 100 AMPERES
- 0.01 AMPERE RESOLUTION (20 A RANGE)
- HIGH ACCURACY — $\pm 1\%$ of range through 1000 Hz
- SURGE FUNCTION — For measuring starting currents and power surges
- HOLD FUNCTION — Reading displayed for 10 seconds after instrument is removed
- AUTOMATIC POWER OFF
- ANALOG OUTPUTS — For oscilloscope and chart recording applications
- ADVANCED HALL-EFFECT TECHNOLOGY
- .625" EASY-TO-READ LIQUID CRYSTAL DISPLAY
- COMPACT — Easy-to-use, human-engineered instrument
- SINGLE LOW-COST 9 V BATTERY
- INDUSTRIAL QUALITY, IMPACT RESISTANT CONSTRUCTION

ACCESSORIES

- DELUXE LEATHER-TEXTURED VINYL CARRYING CASE, Catalog No. 02232 **27.50**
- OSCILLOSCOPE CABLE — 3-wire plug to BNC connector, 4' shielded, Catalog No. 02057 **15.00**
- CHART RECORDER CABLE — 3-wire plug to spade lug connectors, 4' shielded, Catalog No. 02058 **15.00**
- LINE SPLITTER, Catalog No. 00544 **15.00**

Simpson HE 95... Same features as HE 94 except:

- AUTORANGING FROM 0 THROUGH 1000 AMPERES
- 0.1 AMPERE RESOLUTION (200 A RANGE)

Catalog No. 12497 **\$590.00**

Simpson HE 96... Same features as HE 95 except:

- TRUE AVERAGE RESPONDING, AVERAGE CALIBRATED, for correlation with special industry standards, such as welding currents and other average responding applications. Catalog No. 12498 **\$625.00**

SPECIFICATIONS

Model	HE 94	HE 95	HE 96
Ranges:	0-100 A autoranging 2 ranges (0-20, 0-100)	0-1000 A autoranging, 2 ranges (0-200, 0-1000)	
Accuracy:	$\pm 1\%$ of range		
Resolution:	0.01 A (20 A range)	0.1 A (200 A range)	
AC Response:	True rms		True average
Crest Factor:	6 for stated accuracy*		N/A

*AC peak value must not exceed full range value.

Frequency Range:

Analog Output: Instantaneous, DC through 1000 Hz

RMS/Average Measurements: DC + 10 Hz through 1000 Hz

Surge (max. rms value):

Hold Time: Indefinite (until released) **Accuracy:** $\pm 2\%$ of range. **Response Time:** 100 milliseconds

Display Hold: Normal readings "held" for 10 secs (typical)

Jaw Opening (maximum conductor size): Up to 1-7/8" (48 mm) diameter or 7/8" x 2-1/4" (22 mm x 60 mm) rectangular conductor

Analog Output: Two analog outputs are provided via a 3-wire connector, corresponding to instantaneous and rms current values

Voltage (open circuit): 1 mV/ampere

Accuracy: $\pm 1\%$ of range

Source Impedance: 50 ohms

Maximum Load: Up to 1 mA

Overload Capability: 1000%

Battery Type: Single 9 V alkaline, NEDA 1604A

Battery Life: Typical use: 1 year. Continuous operation: 30 hours

Display Type: 3-1/2 digit, LCD, 0.625" (15 mm) high numerals

Symbols: Polarity, AC, low battery

Rated Circuit-to-Ground (Earth) Voltage: 650 V AC rms or 900 V DC

Physical: Size: 10 x 3.5 x 2-3/4" (260 x 90 x 70 mm)

Weight: 1.25 lbs. (585 gm). **Case:** High-impact Lexan polycarbonate

Environmental: Operating Temp: 0°C to 35°C (32°F to 95°F).

Temp. Coefficient: $\pm 0.2\%$ per °C ($\pm 0.1\%$ per °F) **Storage**

Temp.: -40°C to 50°C (-40°F to 122°F). **Humidity:** 0 to 85% relative humidity

Accessories: Supplied: 3-wire analog output connector.

Available: Carrying case, oscilloscope cable, chart recorder cable and line splitter

Simpson Amp Clamp® Testers

Compact balanced-weight instruments for faster testing in motors, relays, transformers and control circuits as well as ordinary power and lighting circuits. Load balance test and AC current measurements are made without equipment shutdown or power line interruption.

- Measure up to 300 amps AC rms without attachments
- Models 295 and 296 also measure up to 600 V AC rms
- Model 296 also measures resistance up to 500 ohms
- Quick, accurate current measurements by simply clamping jaws around one conductor of an AC line
- Current measurements of 2- and 3-wire circuits can be made without disconnecting conductors
- Jaw shape permits easy insertion into crowded wire clusters
- Finger-operated lever locks scale pointer, allowing reading of measurement to be made at some convenient point away from the measuring position, if desired

AMP-CLAMPS FOR 60 HZ • UL Listed

MODEL 296-2 VOLT-OHM-AMMETER, measures AC current, voltage and resistance. Complete with test leads, one 1.5 V AAA alkaline battery, 1/4-amp type 8AG fuse and spare, and operator's manual, Catalog No. 12493	\$104.00
MODEL 295-2 VOLT-AMMETER, measures AC current and voltage. Complete with test leads and operator's manual, Catalog No. 12492	93.00
MODEL 294-2 AMMETER, measures AC current. Complete with operator's manual, Catalog No. 12491	82.00

AMP-CLAMPS FOR 50 HZ

MODEL 296-2, Catalog No. 12119	104.00
MODEL 295-2, Catalog No. 12118	93.00
MODEL 294-2, Catalog No. 12117	82.00

ACCESSORIES

CARRYING CASE, Catalog No. 02224	15.00
EXTRA TEST LEADS, Catalog No. 00041	5.75
CLIP-ON VOLTAGE PROBE, for 295-2, 296-2, Catalog No. 02229	4.75

SPECIFICATIONS

AC Current, Models 294-2, 295-2 and 296-2

Ranges: 0-6, 15, 30, 60, 150, and 300 amperes rms

Accuracy: $\pm 3\%$ of full-scale at 60 Hz sine wave with conductor centered

Temperature Error: Less than 1% of full scale between 15°C to 35°C

AC Voltage, Models 295-2 and 296-2

Ranges: 0-30, 150, 300 and 600 volts rms

Accuracy: $\pm 3\%$ of full scale at 60 Hz sine wave

Temperature Error: 0.5% of full-scale max. between 15°C to 35°C

Resistance, Model 296-2

Range: 0-500 ohms (25 ohm center)

Accuracy: $\pm 3\%$ of arc

Rated Circuit-to-Ground Voltage: 600 V rms max. (850 V peak) per American National Standard, C39.5 (April 1974)

General (All Models)

Weight: 15 oz. (.42 kg)

Dimensions: 10" L x 2.7" W x 1.4" H (254 x 65.6 x 35.6 mm)



Model 296-2
Volt-Ohm-Ammeter



Model 295-2
Volt-Ammeter



Model 294-2
Ammeter



#02224
Carrying Case

MODEL 151-2 LINE SPLITTER for AC Appliance Testing

- Just plug in appliance and test
- Handles 115 V AC line currents up to 10 amps continuously, 15 amps intermittently, without power interruption
- Provides 10X multiplication for low current measurements
- Appliance ground connects directly to grounded AC socket
- Tough, durable, high-impact resistant housing withstands industrial and heavy-duty maintenance conditions

Makes it easy to perform quick, accurate AC current tests on plug-in appliances such as fans, room air conditioners, washers, dryers, toasters. Has a 3-prong grounded plug and socket, with 2-ft. long cord to splitter. Use with Simpson Models 150, 153, 154, 294, 295 and 296 (Series 1 and 2) Amp-Clamp testers and any other clamp-on unit.

Complete with instruction manual, Catalog No. 00544

\$15.00



Battery-Operated Insulation Testers

These precision instruments are ideal for high-voltage, nondestructive insulation tests on electrical installations, machines, equipment and transformers, and electrical gear on locomotives.

MODEL 400-2

- Tests insulation to 500 V DC
- Measures AC/DC voltage to 600 V
- Tests continuity in low resistance circuits
- Special "Indicator" probe illuminates the measuring point, provides quick visual insulation checkout
- Battery-saver pushbutton operation uses battery only during actual measurements

SPECIFICATIONS

Resistance Ranges:

- (1) 0 to 0.4 M Ω , open circuit voltage 665 V, internal resistance 0.25 M Ω
- (2) 0.01 to 5 M Ω , open circuit voltage 665 V, internal resistance 0.15 M Ω
- (3) 2 to 200 M Ω , open circuit voltage 665 V, internal resistance 0.15 M Ω

Accuracy: $\pm 1.5\%$ of fs length

Voltage Range: 0 to 600 V AC/DC

Internal Resistance: Approx. 0.2 M Ω

Continuity Range: 0-4 Ω . Open circuit voltage approx. 5 V DC

Supply: Six 1.5 V batteries. Rated voltage 9 V

Dimensions: 5.6" x 4.6" x 3.2" (141 x 117 x 90 mm)

Weight: 3.5 lbs. (1.65 kg)

MODEL 400-2 INSULATION TESTER, complete with batteries, permanently attached three-foot (1 meter) connecting leads (one with illuminating probe, one with plug-in alligator clip), carrying strap and operator's manual, Catalog No. 12509

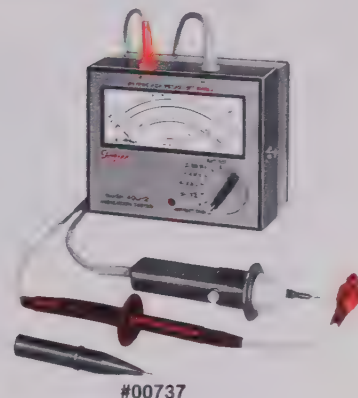
CARRYING CASE, Catalog No. 01612

PLUG-IN PROBE TIP, Catalog No. 00737

\$415.00

29.75

4.75



#00737

#01612 Case

1000 V DC MODEL 401

- Tests insulation to 1000 V DC
- Four switchable test voltages—neon range selection indication
- Measures AC/DC voltage up to 1000 V
- Makes continuity checks
- Light-up probe illuminates measuring point—provides quick visual insulation checkout
- Same battery-saving pushbutton operation as Model 400

SPECIFICATIONS

Accuracy: Resistance ranges $\pm 1.5\%$ fs length. Voltage ranges: $\pm 1.5\%$ fs

Supply: Six 1.5 V batteries. Rated voltage 9 V

Continuity Testing: Lamp operating point: In the range of 100 to 1000 Ω . Open circuit voltage: approx. 5 V DC

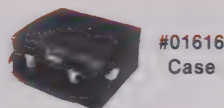
Internal Resistance: Approx. 1 k Ω

Number of Measurements Possible on One Set of Batteries:

Approx. 5000 measurements on test voltage 1000 V, approx. 9000 measurements on test voltage 500 V

Dimensions: 9.6" x 5.5" x 4.13" (245 x 140 x 105 mm)

Weight: 4.9 lbs. (2.2 kg)



#01616

Case

RANGES

Test Voltage	Probe Lamp Operating Point	Insulation Resistance Measurements		
		1	2	3
100V (scale X 0.2)	approx. 0.2 M Ω or greater	0 to 0.08 M Ω	0.02 to 1 M Ω	0.4 to 40 M Ω
250 V (scale X 0.5)	approx. .5 M Ω or greater	0 to 0.2 M Ω	0.05 to 2.5 M Ω	1 to 100 M Ω
500V (scale X 1)	approx. 1 M Ω or greater	0 to 0.4 M Ω	0.1 to 5 M Ω	2 to 200 M Ω
1000 V (scale X 2)	approx. 2 M Ω or greater	0 to 0.8 M Ω	0.2 to 10 M Ω	4 to 400 M Ω

*Rated current on all test voltage ranges 1 mA

MODEL 401 INSULATION TESTER, complete with batteries, permanently connected leads (one with illuminating probe, one with alligator clip), carrying strap and operator's manual, Catalog No. 12502

\$638.00

LEATHER CARRYING CASE, Catalog No. 01616

33.25

PLUG-IN PROBE TIP, Catalog No. 00737

4.75

5000 V DC MODEL 405-2

- Tests insulation to 5000 V DC
- Four selectable test voltages: 500 V, 1000 V, 2500 V and 5000 V
- Push-to-read/lock-on feature conserves the batteries
- Neon scale-selection indicators

SPECIFICATIONS

Accuracy: Megohm ranges: $\pm 1.5\%$ fs length. AC/DC voltage ranges: $\pm 5\%$ fs to 1000 V

Supply: Six 1.5 V batteries. Nominal rated voltage: 9 V

Dimensions: 9.6" x 5.5" x 4.13" (245 x 140 x 105 mm)

Weight: 4.8 lbs. (2.2 kg)

RANGES

Test Voltage	0 to 500 M Ω	40 to 2000 M Ω	20 to 20000 M Ω
500V (scale X 0.1)	0 to 50 M Ω	4 to 200 M Ω	20 to 2000 M Ω
1000 V (scale X 0.2)	0 to 100 M Ω	8 to 400 M Ω	40 to 4000 M Ω
2500 V (scale X 0.5)	0 to 250 M Ω	20 to 1000 M Ω	100 to 10000 M Ω
5000 V (scale X 1)	0 to 500 M Ω	40 to 2000 M Ω	200 to 20000 M Ω



MODEL 405-2 INSULATION TESTER, complete with batteries, two plug-in insulated test leads, probes, carrying strap and operator's manual, Catalog No. 12504

\$950.00

LEATHER CARRYING CASE, Catalog No. 01616

33.25

EXTRA TEST LEADS, Catalog No. 00828

37.75

INSULATED PROBE AND ALLIGATOR CLIP, Cat. No. 00829

24.25

Simpson Service Test Equipment



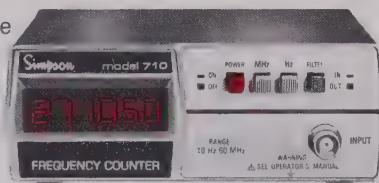
MODEL 710 Compact Frequency Counter

APPLICATIONS

- CB/communications service
- Production line testing
- Frequency monitoring
- R & D laboratory use

FEATURES

- Covers 10 Hz to 60 MHz
- 2 ranges—Hz and MHz
- 6 digit 0.35" LED readout, overrange indicator
- Accurate... ± 1 count ($\pm$ time base accuracy), standard 10 ppm time base
- Resolves 1 Hz
- Switchable low-pass filter eliminates input noise which would cause erroneous readings
- Highly reliable LSI circuitry
- Compact size, has folding bench stand



MODEL 710 FREQUENCY COUNTERS with AC adapter and instruction manual.

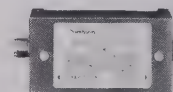
FOR 120 V, Catalog No. 12707 **\$209.00**
FOR 220 V, Catalog No. 12708 **209.00**

ACCESSORIES

CARRYING CASE, Catalog No. 00747 **31.00**
RF CONNECTING CABLE. UHF connector one end, BNC connector at other end, 4' long cable, Catalog No. 00754 **12.00**
DUMMY LOAD. 50 ohms, 15 watt capacity, UHF connectors, Catalog No. 00755 **23.75**
RF CONNECTING CABLE. UHF connectors both ends. Use with dummy load, Catalog No. 00753 **12.00**
12 V DC AUTO CIGARETTE LIGHTER ADAPTER, Catalog No. 00756 **20.25**
GENERAL PURPOSE PROBE, Cat. No. 00238 **21.25**

SPECIFICATIONS

Frequency Range: 10 Hz to 60 MHz
Gate Time: 10 msec (0.1 kHz resolution), 1 sec (1 Hz resolution)
Accuracy: ± 1 count $\pm$ time base accuracy
Input Impedance: 1 M Ω shunted by 30 pF
Sine Wave Sensitivity: 50 mV rms, from 10 Hz to 50 MHz; 100 mV rms, 50 MHz to 60 MHz
Maximum Input Voltage: 240 V peak, from 10 Hz to 100 kHz; derated to 100 V peak at 1 MHz and 25 V peak at 60 MHz
Frequency: 6.5536 MHz
Temperature Stability: ± 10 ppm maximum, 0°C to +45°C
Aging Rate: ± 5 ppm maximum per year
Stability with Line Voltage Variations: ± 1 ppm for $\pm 10\%$ line voltage variation
Input Filter: 3 dB at 1 MHz (low-pass)
Display: 0.35" character height, 7-segment LED type, 6 digits
Sample Rate: 5 samples/sec at MHz switch position, 0.5 sample/sec at Hz switch position
Operating Temperature: 0°C to +45°C
Storage Temperature: -40°C to +70°C
Power Requirement: 120 V AC $\pm 10\%$, 50-400 Hz; approximately 5 VA
Dimensions: 2 x 5.63" x 4.6" (5.0 x 14.2 x 11.6 cm)
Weight: 12 oz. (0.34 kg)



#00755 Dummy Load

MODEL 440 Communications Tester

Measures SWR, Power Output, Percent Modulation, Relative Field Strength
For CB, Amateur, Marine Radio Testing



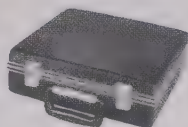
- SWR—checks reflected power from antenna and transmission line
- Power—measures average RF power in 5 ranges—0-10, 25, 100, 250 and 1000 watts. Conversion chart for peak power included
- Percent Modulation—a quick check of the microphone and modulation circuits
- Relative Field Strength—checks the overall operation of transmitter, transmission line and antenna system
- Wide Frequency Range—covers 1.8 MHz to beyond 54 MHz
- Dual Meters—simultaneous readings of average power and SWR, or average power and percent of modulation
- Monitor Jacks—monitor modulation envelope on scope and/or frequency with counter
- In-Line Operation—to 1 kW or built-in 50 ohm dummy load to 25 watts
- Self-Powered—no batteries or external power source required

MODEL 440 COMMUNICATIONS TESTER. Complete with instruction manual, Catalog No. 12515 **\$136.00**
CONNECTING CABLE. 4-ft. long RG-58U coaxial cable with male PL-259 connector each end, Catalog No. 00753 **12.00**

SPECIFICATIONS

Frequency Range: 1.8-54 MHz
Impedance: 50 Ω nominal
Power Ranges: 0-10/25/100/250/1000 W CW, average
Full Scale Accuracy: $\pm 5\%$ at 27 MHz; $\pm 10\%$ over freq. range except $\pm 15\%$ from 5-15 MHz and 40-54 MHz
SWR: 1.0-10 direct reading
Accuracy: $\pm 5\%$ of arc
Power Requirement for Full Scale Calibr.: 1 W min., 15-54 MHz; 2 W min., 10-15 MHz; 10 W min., 4-10 MHz, 40 W min., 1.8-4 MHz
Percent Modulation Indication: 0-150% direct reading
Accuracy: $\pm 5\%$ of full scale (30%-75% modulation)
Power Requirement for Full Scale Calibration: 1 W min. for reference (100%)
Relative Field Strength Indication: 0-10 linear scale
Upper Cutoff Frequency: 230 MHz min.
RFS Sensitivity: 10 μ V/mW/cm² min.
RFS Antenna: Integral telescoping antenna extends to 12"
Dummy Load Power Rating: 25 watts intermittent
Impedance: 50 ohms nominal
Input VSWR: 1.08:1 nominal
Readout: Two 3" 50 μ A fs pivot-and-jewel meters
Monitor Jacks: 2 pin jacks provided for monitoring RF, modulated RF and the demodulated audio
RF Connectors: Two SO-239 (UHF)
Weight: 2 lbs. 6 oz. (1.07 kg)
Dimensions: 5.375 x 8 x 4.5" (13.65 x 20.32 x 11.43 cm)
Temp.: oper., 0°C to +55°C, stor., -65°C to +105°C

Function Generator



#01617
Case

MODEL 420 Function Generator

- Provides sine, triangle, square, DC and TTL output
- Wide 0.1 Hz to 1 MHz coverage in 7 ranges
- Voltage-controlled generator input for sweep
- Continuously variable DC offset with Off position
- Compact portable signal source for bench or field
- Full day's operation on batteries, recharge overnight

New portable generator for audio and communications servicing, laboratory and production use.
Furnished with line cord and manual.

MODEL 420A for AC line operation only.

FOR 120 V, Cat. No. 12671.....	\$204.00
FOR 220 V, Cat. No. 12672.....	204.00
FOR 240 V, Cat. No. 12673.....	204.00
CARRYING CASE, Catalog No. 01617.....	42.25

MODEL 420D for AC line and rechargeable battery operation.
Batteries not included.

FOR 120 V, Cat. No. 12674.....	\$243.00
FOR 220 V, Cat. No. 12675.....	243.00
FOR 240 V, Cat. No. 12676.....	243.00
Batteries, Catalog No. 00045, Pkg. of 4	47.25

SPECIFICATIONS

Basic Outputs: Sine, triangle, square, DC and TTL (separate BNC)

Frequency Range: 0.1 Hz to 1 MHz in seven ranges

Amplitude: 20 V p-p open circuit (10 V p-p into 600 ohms)

Amplitude Control: Continuously variable, >30 dB; fixed attenuation, 10-30 dB

VCG Input: ± 20 V maximum, 2 k Ω input impedance. Frequency decreases from dial setting with negative voltage.

DC Offset: Continuously variable with Off position

Dial Accuracy: $\pm 5\%$ fs

Sine Wave Distortion: <1% 10 Hz to 100 kHz, <2% at all other frequencies

Triangle Wave Non-Linearity: <1% up to 100 kHz

Square Wave Rise/Fall Time: <100 nsec into 600 ohms/20 pF

Square Wave Non-Symmetry: <1% up to 100 kHz

VCG Range: >300:1 with 0 to -5 V external signal with 1000:1 capability

TTL Output: Fixed TTL compatible output will drive up to 10 TTL loads. <25 nsec rise/fall time.

DC Offset: Continuously variable, maximum of 10 V open circuit or ± 5 V into 600 ohms (maximum V AC + V DC without clipping). Off position is provided.

Output Impedance: 600 ohms, $\pm 5\%$

Amplitude Flatness: ± 0.1 dB up to 20 kHz, ± 0.3 dB overall, sine wave

Square Wave Aberration: <3%

Temperature Stability (after 15 minutes warm-up): Frequency: $\pm 0.1\%/^{\circ}\text{C}$; **Amplitude:** ± 0.05 dB/ $^{\circ}\text{C}$

Line Voltage Stability: Frequency: $\pm 0.1\%$ per ± 10 VAC variation; **Amplitude:** ± 0.05 dB per ± 10 VAC variation

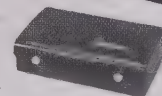
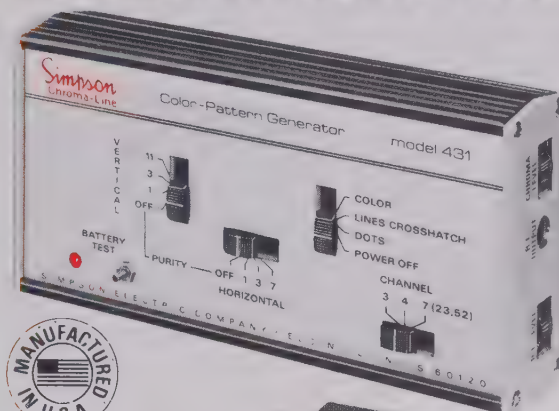
Operating Temperature: 0 to $+50^{\circ}\text{C}$

Power Requirements: 120/220/240 V AC $\pm 10\%$, 50/60 Hz, 6 VA. 4 "C" size nickel-cadmium batteries for D version only (8 hours of operation per full charge)

Size: 2.7 x 8.4 x 9.0"

Weight: A version, 3 lbs.; D version, 4 lbs. with batteries

Chroma-Line® Color Pattern Generator



#00817
Case

MODEL 431

- Compact. Weighs 13 oz.
- 28 patterns. 13 tests
- Easy, accurate adjustment of color and black-and-white sets
- More performance for the price than any other small size unit
- One 9-V battery gives approximately 100 hours of use
- Digital IC logic countdown chains
- Crystal-controlled chroma subcarrier oscillator for stability. 3 VHF and 2 UHF channel outputs
- Adjustable chroma and RF output
- External access battery compartment

MODEL 431 COLOR PATTERN GENERATOR, Complete with battery, cable assembly and operator's manual, Catalog No. 12511 **\$154.00**
CARRYING CASE, Catalog No. 00817..... **12.00**

SPECIFICATIONS

RF OUTPUT

Frequency: CH 3 (61.25 MHz), CH 4 (67.25 MHz), CH 7 (175.25 MHz), CH 23 and 52 (3rd and 5th overtones of CH 7, respectively). CH 3, 4, and 7 are L-C controlled.

Frequency Accuracy: $\pm 0.02\%$ at reference conditions (all channels)

Frequency Tolerance: $\pm 0.15\%$ over temperature range (all chambers)

Impedance: 75 ohms (all channels)

Level: Adjustable to approximately 20 mV typical (all channels)

CHROMA OFFSET SUBCARRIER

Frequency: 3.563795 MHz, crystal controlled

Frequency Accuracy: $\pm .001\%$ at reference conditions

Frequency Tolerance: $\pm .01\%$ over temp. range

Level: Adjustable from 0-200%

MASTER CLOCK

Frequency: 378.0 kHz, ceramic resonator controlled

Frequency Accuracy: $\pm .005\%$ at reference conditions

Frequency Tolerance: $\pm 1\%$ over temperature range

TEST PATTERNS (28 total)

Color: Ungated rainbow

Color Bars: Three bars gated, spaced at 90° , 180° and 270° phase intervals from burst: R-Y, B-Y, -(R-Y); Ten bars, gated, spaced at 30° phase intervals from burst

Horizontal Lines: 1, 3 or 7

Vertical Lines: 1, 3 or 11

Cross Hatch: 1x1, 1x3, 1x7, 3x1, 3x3, 3x7, 11x1, 11x3, 11x7

Dots: 1, 1x1, 1x3, 1x7, 3x1, 3x3, 3x7, 11x1, 11x3, 11x7

Blank Raster: Purity, white, no noise (sync. modulation only)

Reference Conditions: 25° ($\pm 5^{\circ}\text{C}$) ambient temperature and 60° ($\pm 15\%$) relative humidity

Operating Temperature Range: 0°C to $+65^{\circ}\text{C}$

Storage Temperature: -65°C to $+150^{\circ}\text{C}$

Power Requirements: One 9 V alkaline cell, NEDA 1604A

Size: 6.287" L x 3.156" W x 1.406" H (160 x 80 x 36 mm)

Weight: 13 oz. (368 gm)

Simpson Oscilloscopes

MODEL 454 15 MHz Dual Trace Triggered Sweep 3" Scope

For design, development and servicing of analog and digital electronics circuitry, communications and audio equipment, and TV . . . in the lab, shop, production line or in the field.

- Dual vertical inputs permit simultaneous viewing of two waveforms
- Differential amplifiers from inputs through deflection stages provide common mode noise rejection for stable, distortion-free waveforms
- Displays Channel A, Channel B, A and B, A plus B, A minus B
- Voltage calibrated vertical and horizontal input attenuators
- DC to 15 MHz bandwidth, 5 mV/division sensitivity, 100 nsec/division to .5 sec/division sweep range
- Chopping rate 200 kHz for low speed waveforms
- Alternate mode automatically selected when viewing high speed waveforms
- 24 nsec rise time for display of digital pulses and fast sweeps
- 0.5 V P-P square wave calibration source
- X5 magnification expands trace to display complex waveforms
- Triggering—external, Channel A or Channel B, with TV sync position
- Compact 4-5/8 x 9-7/8 x 13-1/4" weighs 13 lbs.
- Two low capacitance Direct/10 to 1 Probes included



This compact industrial oscilloscope is ideal for in-the-field servicing

MODEL 454, with operator's manual, and two #00791 probes.

FOR 120 V AC, No. 12524	\$730.00
FOR 240 V AC, No. 12533	730.00
ACCESSORIES POUCH, Cat. No. 00783	25.25
PROTECTIVE COVER, Cat. No. 00784	8.25
EXTRA DIRECT/10 TO 1 PROBE, Cat. No. 00791	46.25

SPECIFICATIONS

VERTICAL AMPLIFIER (CH A and CH B)

Sensitivity: 5 mV/div. to 10 V/div. calibrated in 1-2-5 sequence in 11 steps; accuracy $\pm 5\%$ F.S.; continuous control between steps

Bandwidth:

DC coupled: DC to 15 MHz (-3 dB)

AC coupled: 5 Hz to 15 MHz (-3 dB)

Rise Time: 24 nsec

Input Impedance: 1 M Ω , 25 pF

Maximum Input Voltage: 500 V (DC + AC peak) with 10X probe to 1 kHz. 250 V with direct probe.

Calibration Voltage: 0.5 V P-P, $\pm 1\%$ 1 kHz square wave approx.

HORIZONTAL AMPLIFIER

(Input through CH B)

Sensitivity: 5 mV/div. to 10 V/div. (same as vert. sensitivity)

Bandwidth, at -3 dB: DC or 5 Hz to 1 MHz

Input Impedance: 1 megohm, 25 pF

Maximum Input Voltage: 500 V (DC + AC peak) with 10X probe. 250 V with direct probe.

SWEEP RANGES

Time/cm Range: .5 μ sec/div. to .5 sec/div. in 1-2-5 sequence in 19 calibrated steps; uncalibrated continuous control between steps. Pushbutton TV sync. $\pm 5\%$ F.S. accuracy.

TRIGGERING

Source: External, CH A, CH B

Mode: Normal and automatic

Coupling: AC

Slope: - or + of trigger signal

Sensitivity: Internal: 1 div., 10 Hz to 15 MHz

TV Sync: .5 div.

External: .5 V P-P from 5 Hz to 15 MHz

CRT: 75AWB31 3" round flat face, 4.8 x 6 cm display, P31 phosphor, high-contrast graticule

Operating Temperature: 0° to +45°C

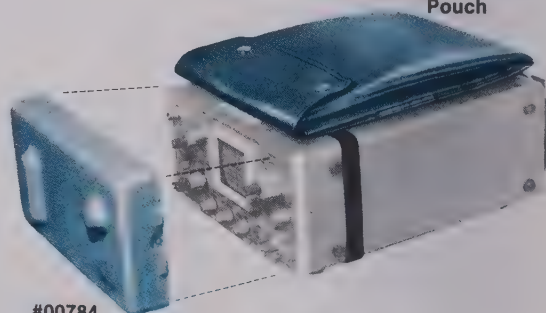
Power Requirements: 120 V AC or 240 V AC ($\pm 10\%$), 50 or 60 Hz, 16 VA

Weight: 13 lbs.

Size: 4-5/8" H x 9-7/8" W x 13-1/4" D

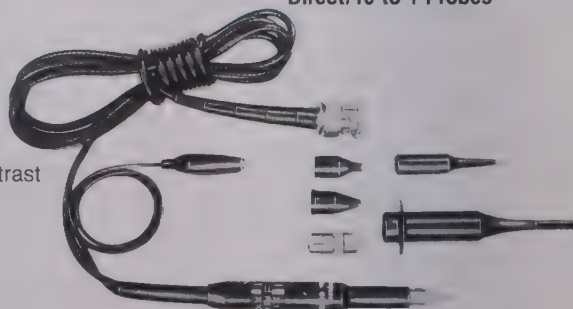


#00783
Accessories
Pouch



#00784
Cover

Included!
Two #00791 low-capacitance
Direct/10 to 1 Probes



Simpson Oscilloscopes

MODEL 452 Dual Trace 15 MHz Triggered Sweep Scope

For design, development and service of digital circuitry, communications, audio and TV equipment . . . in lab, shop or in the field.

- DC to 15 MHz (-3 dB) bandwidth
- Reliable integrated circuitry and all solid-state components (except CRT)
- Triggering—internal and external with TVV, TVH, VITS sync positions
- Sweep automatically shifts between Chop and Alternate
- 24 nsec rise time, displays digital pulses or other fast sweeps
- Front-panel X-Y displays using matched vertical amplifiers
- Displays CH A, CH B, A & B, A + B, A-B
- 0.5 V P-P 1 kHz square wave calibrator
- Voltage-calibrated vertical and horizontal inputs
- X5 trace magnification



MODEL 452 DUAL TRACE SCOPE, with operator's manual, less probes.

FOR 120 V AC, No. 12513 **\$919.00**
FOR 220-240 V AC, No. 12514 **919.00**

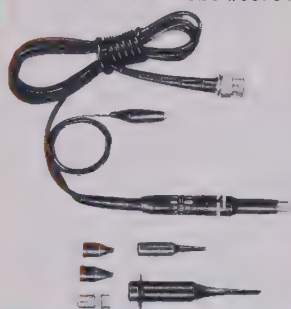
MODEL 452 SCOPE with two No. 00791 probes. **\$997.00**
FOR 120 V AC, No. 12537 **997.00**
FOR 220-240 VAC, No. 12536 **997.00**

ACCESSORIES

EXTRA DIRECT/10-TO-1 PROBE, No. 00791 **46.25**
PROTECTIVE COVER, Cat. No. 00792 **19.25**
LIGHT HOOD, Cat. No. 00793 **12.00**



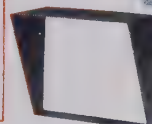
Direct/10 to 1 Probe #00791



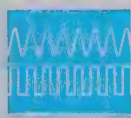
#00792 Cover



#00793 Light Hood



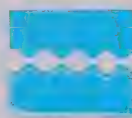
Display composite video and AGC pulse



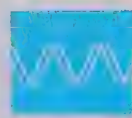
Display op-amp input/output, A/D converter



Check logic including countdowns and PLL



27 MHz "CB" envelope and modulating signal



Check phase shift and distortion in amplifiers

SPECIFICATIONS

VERTICAL AMPLIFIER

(CH A AND CH B)

Deflection Sensitivity: 5 mV/cm to 10 V/cm calibrated in 1-2-5 sequence in 11 steps; accuracy within $\pm 5\%$; uncalibrated continuous control between steps

Bandwidth

DC Coupled: DC to 15 MHz (-3 dB)

AC Coupled: 2 Hz to 15 MHz (-3 dB)

Rise Time: 24 nsec

Overshoot: 5% or less

Input Impedance: 1 M Ω , 25 pF

Maximum Input: 500 V (DC + AC peak)

Display Modes: CH A only, CH B only, CH A and B (chopped at 1 msec/cm and slower sweeps, alternated for faster speeds), add (A + B), CH B invert (A-B)

Chop Frequency: 200 kHz

HORIZONTAL AMPLIFIER

(Input through CH B)

Bandwidth (at -3 dB):

DC Coupled: DC to 1.5 MHz

AC Coupled: 2 Hz to 1.5 MHz

Input Impedance: 1 M Ω shunted by 25 pF

Maximum Input: 500 V (DC + AC peak)

Deflection Sensitivity: 5 mV/cm to 10 V/cm calibrated in 1-2-5 sequence in 11 steps; accuracy within $\pm 5\%$ of full screen deflection; uncalibrated continuous control between steps

CALIBRATION VOLTAGE

0.5 V P-P $\pm 1\%$, square-wave, 1 kHz approx.

HORIZONTAL SWEEP RANGES

Time/cm (20 Ranges): 0.2 μ sec/cm to 0.5 sec/cm ($\pm 5\%$) calibrated to 1-2-5 sequence in 20 steps; uncalibrated continuous control between steps

TV-H: 12.7 μ sec/cm

TV-V: 3.33 msec/cm

VITS: 0.1 msec/cm

Magnifier: X5 expands the fastest sweep speed, from 0.2 μ sec/cm to 40 nsec/cm

TRIGGERING

Source: External, CH A, CH B

Mode: Normal and automatic

Coupling: AC

Slope: Positive and negative

Sensitivities: Internal (CH A or CH B):

0.5 cm P-P from 10 Hz to 10 MHz; 1 cm P-P from 3 Hz to 15 MHz. **External:** 0.5 V P-P from 3 Hz to 15 MHz. **Auto:** 0.5 cm P-P from 50 Hz to 15 MHz. **TV Sync:** 0.5 cm P-P of deflection

CRT

Type: 130 BHB31

Screen Size: 5" round flat face

Display Area: 8 x 10 cm

Screen Phosphor: P31

ENVIRONMENT

Operating Temperature: 0° to +45°C

Vibration: Meets EIA spec RS 152B

POWER REQUIREMENTS

AC Voltage: 120 V AC $\pm 10\%$, 220 V AC $\pm 10\%$ or 240 V AC $\pm 10\%$

Frequency: 50 to 60 Hz

Average Power Consumption: 45 VA

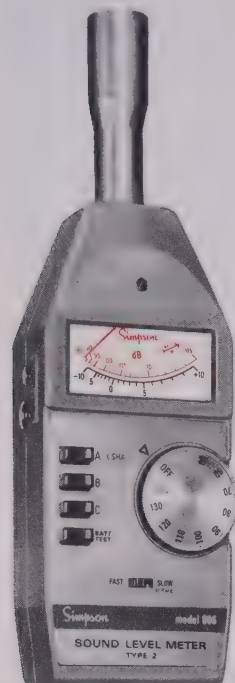
Fuse Ratings: 1 ampere 125 V 3 AG slow-blow (120 V operation)

Weight: 20 lbs. (9.0 kg)

Dimensions: 6 1/2" H x 12" W x 16" D (16.5 x 30.5 x 40.6 cm)

Sound Level Meters and Accessories

MODEL 886 Type 2 General-Purpose Sound Level Meter Approved By M.S.H.A.*



Model
886



Model
884

884, 886 SOUND LEVEL METER ACCESSORIES

890 CALIBRATOR, Cat. No. 12618	\$165.00
896 CALIBRATOR, Cat. No. 12709	215.00
ATTACHE CARRYING CASE, Cat. No. 00217	59.50
WRIST STRAP, Cat. No. 00576	5.50
WIND SCREEN, Cat. No. 00197	6.50
MIKE HOLDER, (886 only) Cat. No. 00184	6.00
25-FT. MIKE CABLE, (886 only) Cat. No. 00198	36.75
MIKE ASSY., (886 only) Cat. No. 00183	80.50

*Mine Safety Health Administration

For measurement and analysis of sound over a wide range of frequency and power

- Meets IEC 123 and ANSI S1.4-1971 (R1976) specifications
- Helps you meet OSHA and Walsh-Healy noise control specifications
- Quickly, accurately measures sound levels in factories, offices, stores, theatres, construction sites, studios
- Simple, easy to operate
- Rugged solid-state reliability, battery powered
- Full coverage 40-140 dB, with special 85-115 db OSHA range, fast or slow response and standard A, B and C weightings selection
- Impact-resistant case contoured to minimize sound energy field reflections
- Omnidirectional condenser Type L size microphone can be detached for remote use with optional 25-ft. cable
- Operates 50 hours on two 9 V batteries
- AC voltage output jack permits interfacing with recorders, analyzers and other testers
- External filter output jack permits use with Simpson Model 888 Octave Band Filter for noise frequency analysis
- Built-in tripod mount; also accommodates optional safety wrist strap

SPECIFICATIONS

Microphone:

Type: Condenser Type L size per ANSI S1.12-1967

Impedance: 350 ohms $\pm 20\%$ at 23°C

Directional Characteristics: Omnidirectional—angle of incidence approximates a random response equal to 70°

Sound Level Measurement Ranges: 40 dB to 140 dB. Zero (0) dB reference is 0.0002 μ bar

Accuracy: Meets ANSI specifications S1.4-1971 for a Type 2 general purpose sound level meter and IEC 123 specifications

Signal Output: 1.2 volts rms open-circuit, for a full scale meter indication. Source impedance is 620 ohms

Calibration: Screwdriver adjustable using Model 890 or 896 calibrator (pg. 42)

Power Requirements: Two 9-volt batteries, NEDA 1604, 50 hrs. life approx.

Weight: 1-1/4 lbs. (.57 kg)

Dimensions (with microphone attached): 3.03" x 10.07" x 1.87" (77 x 255.8 x 47.7 mm)

MODEL 886 SOUND LEVEL METER, complete with external output plug, 2 batteries and operating instructions. Accessories sold below.

Catalog No. 12620 **\$395.00**

MODEL 884 Type S2A Sound Level Meter Approved

By M.S.H.A.* A basic instrument for portable sound and noise measurements

- Meets OSHA and Walsh-Healy requirements for noise control
- 50 to 130 dB range • Conforms to ANSI S1.4-1971 (R1976), Type S2A
- Rugged, high-impact case • Solid-state construction
- AC voltage output jack permits interfacing with recorders and other testers
- Tripod mounting socket provided which also accommodates safety wrist strap

SPECIFICATIONS

Microphone: Omnidirectional, condenser Type L size per ANSI S1.12-1967. Impedance: 300 $\Omega \pm 20\%$ @ 23°C

Accuracy: Meets ANSI specifications S1.4-1971 (R1976) for Type S2A general-purpose sound level meter

Weighting: "A" per ANSI specifications S1.4-1971 (R1976) for Type 2

Ranges: 50 dB to 130 dB. Zero (0) dB reference is 0.0002 μ bar

Signal Output: 1.2 volts rms open circuit, fs. 100 Ω output impedance

Calibration: Screwdriver adjustable using Model 890 or 896 calibrator (pg. 42)

Power: Two 9 V NEDA 1604 batteries, 100 hrs. life approx.

Size: 3.03" x 8.18" x 1.87" (77 x 207.8 x 47 mm). Weight: 13.5 oz. (.35 kg)

MODEL 884 SOUND LEVEL METER, complete with external output plug, 2 batteries and operator's manual, Catalog No. 12619

\$290.00

SPECIAL PACKAGE OFFER

Free attache case (worth \$59.50) with purchase of Model 886 and accessories. Includes Model 886, Model 890 calibrator, microphone wind screen, microphone to tripod adapter, 25-ft. extension cable, three 9 V batteries, calibration adjusting screwdriver, wrist strap and operator's manuals, 886/890 PACKAGE, Cat. No. 12622

\$620.00



SPECIAL PACKAGE OFFER

Free attache case (worth \$59.50) with purchase of Model 884 and accessories. Includes Model 884, Model 890 calibrator, microphone wind screen, three 9 V batteries, calibration adjusting screwdriver, wrist strap and operator's manuals, 884/890 PACKAGE, Catalog No. 12616

\$455.00



Simpson Noise Dosimeter



Models 891, 891B and 892 Personal Noise Dosimeters

Portable, accurate sound measurement instrument designed to allow direct automatic determination of OSHA noise exposure compliance without calculations. This complete dosimeter system consists of a monitor and self-contained readout in a compact instrument that is specifically designed to be worn either in the shirt pocket or on the belt.

The dosimeter may be used to determine percent noise dosage, elapsed exposure time, and the equivalent continuous noise level over a measurement period. The instrument is battery powered and ruggedly constructed to permit use in virtually any location. The display and control panel is secured under a cover to permit access only to authorized individuals.

The use of advanced, solid-state electronics, careful selection of components and a special Electret condenser microphone ensures a stable design of excellent reliability, smooth amplitude and frequency response with relative immunity to normal temperature and humidity changes.

SPECIFICATIONS

Microphone: Type M size (0.52" dia.) omnidirectional Electret; maximum sound pressure level 148 dB

Sound Threshold Level (Lt): **Model 891**, 89.5 dBA ± 0.5 dBA, **Model 891B**, 79.5 dBA ± 0.5 dBA, **Model 892**, 80 dBA ± 1 dBA

Dynamic Range: **Model 891**, 90 dBA to 115 dBA; **891B**, 80 dBA to 130 dBA per OSHA; **Model 892**, 80 dBA to 115 dBA per ISO

Reference: 0 dB = 0.0002 μ bar

Accuracy: Both meet accuracy requirements of ANSI S1.25-1978 and S1.4-1971

Max. Dose Accumulation: 9999%

115 dBA Memory: Activated by sound levels exceeding 115 dBA. All decimal points flash.

Calibration: 1000 Hz, 114 dB acoustic input (Model 887 calibrator listed on following page)

Elapsed Time: Logs operation time 0-99.99 hours at 36 sec per count (1/100 hour)

Hold: Halts accumulation of dose and time

Dose Readout: 4-digit LED displays 0-9999% dose (100% dose = 90 dBA/8 hours)

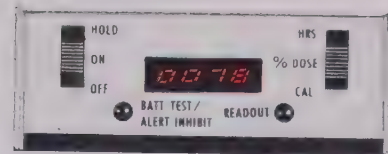
Calibration Readout: 4-digit LED displays "0100" with 114 dB, 1000 Hz acoustic input

Power Requirements: One 9 V (NEDA 1604) battery provides more than 80 hrs. @ 8 hrs./day operation

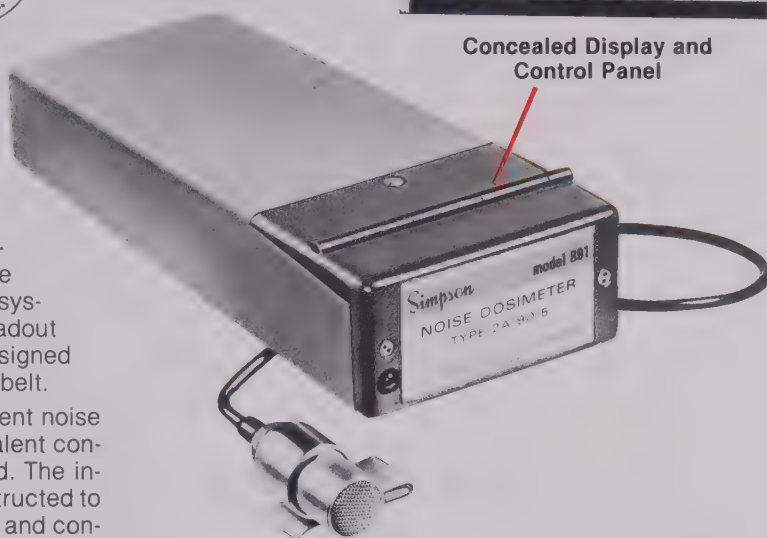
Battery Test: Left-most decimal indicates at least 8-hr. battery life remaining

Size: 6.50" x 2.625" x 1.312" excluding microphone

Weight: 11.5 oz. including battery and microphone

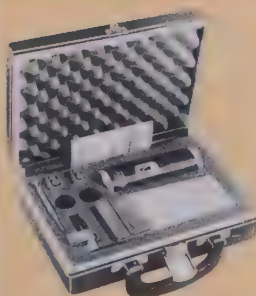


Concealed Display and Control Panel



MODEL 891 PERSONAL DOSIMETER, meets MSHA specs, Catalog No. 12607	\$665.00
MODEL 891B PERSONAL DOSIMETER, meets OSHA specs, Catalog No. 12612	665.00
MODEL 892 PERSONAL DOSIMETER, meets ISO specs, Catalog No. 12608	665.00
ATTACHE CARRYING CASE, Catalog No. 00218	59.50
MODEL 887 CALIBRATOR, Catalog No. 12623	165.00

- Automatic computation of percent noise dosage per OSHA or ISO specifications
- Self-contained pocket-size unit
- Rugged 1/2" Electret clip-on microphone
- Concealed readout and controls accessible using supervisor's "key"
- "Hold" memory feature permits temporary interruption or later readout
- Short duration on measurements may be projected to 8-hour or 40-hour dosage
- OSHA model may be recalibrated to meet proposed 85 dB threshold level
- External LED to indicate 100% exposure



SPECIAL PACKAGE OFFER!

Free attaché carrying case (worth \$59.50) with purchase of Model 891B or 892 Dosimeter and Model 887 Calibrator.

891/887 PACKAGE, Catalog No. 12626	\$815.00
891B/887 PACKAGE, Catalog No. 12633	815.00
892/887 PACKAGE, Catalog No. 12627	815.00

Simpson Sound Level Accessories



MODEL 888 Precision Octave Band Filter

Portable, battery operated precision instrument designed to meet the requirements of ANSI S1.11-1971, DIN 45651 and IEC 255. Ideal for use with the Simpson Model 886 Sound Level Meter for octave band analysis of noise. Convenient range switch selects filter frequencies and battery test function. BNC type connectors for easy connection. The recorder output function of the Model 886 is available on the front panel of the Model 888 when the two instruments are connected together.

- For use with the Simpson Model 886 Sound Level Meter for octave band analysis of noise by direct cable connection, or with other laboratory instruments
- Recorder output and filter input and output jacks provided
- Meets ANSI S1.11-1966 (R1971), DIN45651 and IEC 225 (1966) requirements
- Single-switch control, built-in LED battery test indication
- Rugged, solid-state construction

SPECIFICATIONS

Center Frequencies: 31.5, 63, 125, 250, 500, 1000, 2000, 4000 and 8000 Hz, switch selectable

Filter Gain: 0, +10 dB, +20 dB and bypass provision with Simpson Model 886

Power: Two 9 V batteries, 100 hrs. life approx.

Weight: 3.6 lbs.

Size: 7.19"D x 6.01"W x 2.6"H



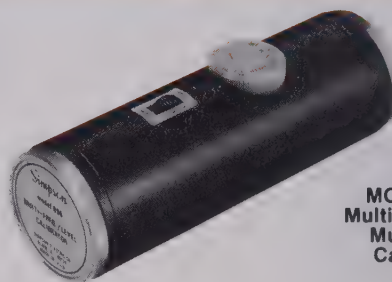
MODEL 888 with batteries, calibration adjusting screwdriver, connecting cable and operator's manual, Catalog No. 12617.....**\$550.00**

MODEL 887, 890, 896 Sound Level Calibrators

- Built-in LED battery test indicator
- Self-contained hand-size



MODEL 890 for Sound Level Meters
MODEL 887 for Dosimeters



MODEL 896 Multi-Frequency Multi-Level Calibrator

MODEL 890 CALIBRATOR FOR SOUND LEVEL METERS MODEL 887 CALIBRATOR FOR DOSIMETERS

Low priced yet highly accurate, portable sound sources for convenient field calibration of Simpson and other sound level meters and dosimeters. Provide a constant, calibrated sound pressure level of 114 dB (0 dB reference is 20 μ Newtons/mtr²).

Simple to operate. A 3-position slide switch selects power Off/On and battery test functions. In battery test function, a red LED lights to indicate adequate battery voltage.

Use of advanced, solid-state electronics, careful choice of components, and a special sound transducer achieve rugged stable design with excellent reliability and immunity to normal temperature and humidity changes.

MODEL 887, 890 SPECIFICATIONS

Acoustical Output: Frequency: 1000 Hz $\pm 1\%$ **Sound Pressure Level:** 114 dB ± 0.5 dB at reference conditions

Distortion: Less than 1%

Temperature Range: 0 to +50°C

Output Temperature Coefficient: Better than minus 0.05 dB/°C

Relative Humidity: 0-90%

Power: One 9 V battery, NEDA 1604, 35 hours' life approx.

Reference Conditions: 23°C, 760 mm Hg and 30% to 50% relative humidity, 0 dB = 0.0002 μ bar

Weight: 13.8 oz. (.38 kg)

Size: 5-1/4" x 2" dia. (131 x 50 mm)

MODEL 890 CALIBRATOR, N.I.O.S.H. and M.S.H.A. approved when calibrating Simpson Models 884 and 886. Also calibrates similar Sound Meters.
Catalog No. 12618**\$165.00**

MODEL 887 CALIBRATOR, M.S.H.A. approved. For calibrating Simpson Models 891, 891B and 892 Personal Dosimeters and similar instruments,
Catalog No. 12623**\$165.00**

NEW MODEL 896 MULTI-FREQUENCY/LEVEL CALIBRATOR

A deluxe, highly accurate, portable instrument for field calibration of Simpson and other sound level meters. Provides constant, calibrated sound pressure levels of 114 dB or 94 dB (0 dB reference 20 μ Pascals) at the microphone of the sound level meter at each of five frequencies: 125, 250, 500, 1000 and 2000 Hz. Provides a convenient method of checking A, B or C weighted responses.

Two controls. A slide switch selects 94 or 114 dB levels. Rotary switch selects from five output frequencies or battery test functions, and has two Off positions for operator convenience. In battery test function, a red LED indicates adequate battery voltage.

MODEL 896 SPECIFICATIONS

Acoustic Outputs: Frequencies: 125, 250, 500, 1000 or 2000 Hz
Sound Pressure Level: 114 dB SPL or 94 dB SPL (Reference: 0 dB = 20 μ Pascals)

Accuracies: Levels (Simpson 884/886 microphone): ± 0.5 dB all frequencies at reference conditions **Frequencies:** $\pm 2\%$ all frequencies

Distortion: Less than 5%

Temperature Range: 0°C to 50°C

Output Temperature Coefficient: Less than minus 0.2 dB/°C

Operating Relative Humidity: 0 to 90%

Power Requirements: One 9-volt battery, NEDA 1604

Battery Life: Approximately 120 hours for 2 hours per day operation. Nominal current drain: 3mA. (Refer to appropriate manufacturer's data for temperature effects on battery life.)

Reference Conditions: 23°C, 760 mm Hg 30% to 60% relative humidity

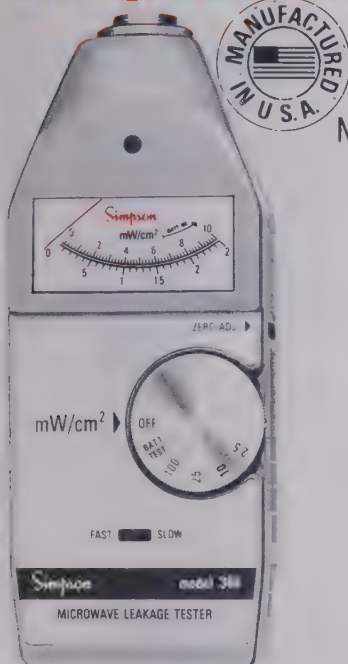
Weight: 15 oz. (0.426 kg)

Size: 2" dia. x 5-7/8" long

Construction: Aluminum housing with all electronic circuitry on a single printed circuit board.

MODEL 896 CALIBRATOR, for calibrating Models 884 and 886 Sound Level Meters and other instruments,
Catalog No. 12709**\$225.00**

Simpson Microwave Leakage Tester



MODEL 380—Series m Battery-Operated Direct-Reading Portable Instrument

Meets the Measurement Requirements of the Federal Performance Standard for Leakage from Microwave Ovens

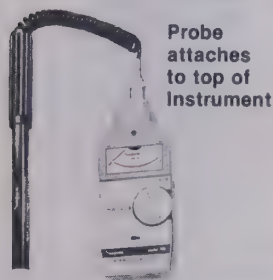
- For pre-testing by manufacturers and for in-the-field checking of commercial, industrial and institutional installations by professional servicemen
- Completely self-contained, direct reading in mW/cm^2
- Measures amount of microwave leakage energy radiated by ovens, heaters, dryers and various other industrial equipment generating high power at microwave frequencies of 2450 MHz
- Non-polarized, hand-held, wide-range probe permits selection of four distinct ranges for power density measurements
- High torque indicating movement with shock resistant, taut-band suspended, moving coil system
- Manufacturers can easily check microwave ovens for proper sealing on the production line. Appliance servicemen can readily test for leakage in customer's home
- Slide switch enables selection of response time best suited to measurements to be made
- Ranges: 0-2.5-10-25-100 mW/cm^2 • 2.5 mW/cm^2 full scale sensitivity
- Durable vinyl carrying case is supplied to protect and safely store Model 380 and associated accessories
- Convenient battery powered portability, no line cord restrictions in use
- Easily accessible, battery compartment • Rugged, high-impact instrument case

MODEL 380m, complete with probe, foam spacer, two 9 V batteries, operator's manual, all contained in durable attache-type case, Catalog No. 12381 **\$375.00**
 EXTRA FOAM SPACER, No. 00781 **20.75**
 EXTRA CARRYING CASE, No. 00782 **36.00**

SPECIFICATIONS

Calibration Frequency: 2450 MHz ± 10 MHz
Power Density Reading
Ranges: 0-2.5, 0-10, 0-25, 0-100 mW/cm^2
Instrument Accuracy: ± 1 dB
Instrument Response Time: **Fast:** 1.2 seconds max.
Slow: 3.0 seconds max.
Meter Scales: Linear Scale, two arcs: 0-2.5 and 0-10
Temperature Characteristics:
Normal Operating Range: $+10$ to $+40^\circ\text{C}$
Temperature Coefficient: ± 0.057 dB/ 10°C
Storage Temperature: -40 to $+60^\circ\text{C}$ (batteries removed)
Probe Characteristics:
Time Constant: 0.5 sec.
Power Density Range: 0-100 mW/cm^2
Overload Rating: 300 mW/cm^2 max.

Power Requirements: Two 9 volt batteries, NEDA No. 1604, supplied
Battery Life: 400 hours min.
Mechanical Construction: High-impact case, electrically shielded with separate battery compartment
Special Instrument Feature: 1/4-20 threaded insert for tripod mounting
Dimensions:
Instrument: 8.18" L x 3.03" W x 1.87" D (208 x 77 x 47 mm)
Probe: 11" lg. x 3/4" dia. (279 x 19 mm)
Probe Cable: Coiled: 6" (152 mm), Uncoiled: 43" (1092 mm)
Weight: .8 lb. (.16 kg)



Probe attaches to top of instrument



Case Included

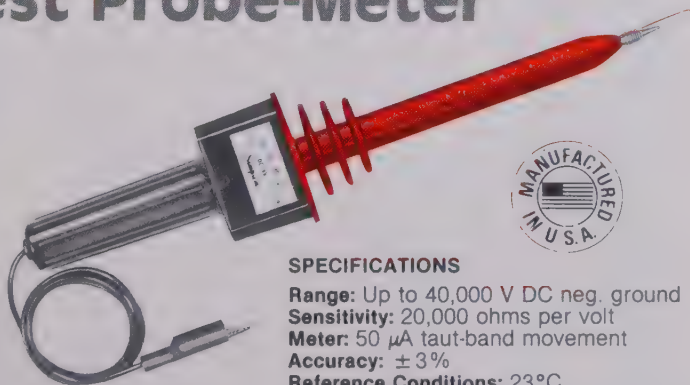
Simpson 40 kV DC Test Probe-Meter

MODEL 248 High Voltage Tester

Designed for accurate voltage measurements in low-power high-impedance high-voltage circuits such as TV receivers, video monitors or oscilloscopes

- Measure up to 40 kV DC with 20,000 ohms/volt sensitivity, $\pm 3\%$ accuracy
- Direct-reading kilo-volt scale, 50 μA taut-band meter movement
- Precision high-voltage multiplier resistor is spring suspended and sealed
- Probe tip has spring hook for "hands-off" measurements
- Rugged Noryl thermoplastic probe body, handle and overload disc barriers provide superior insulation

MODEL 248 40 kV DC TEST PROBE-METER, with operator's manual, Catalog No. 00169 **\$62.00**
 CARRYING CASE, Catalog No. 00804 **14.75**



SPECIFICATIONS

Range: Up to 40,000 V DC neg. ground
Sensitivity: 20,000 ohms per volt
Meter: 50 μA taut-band movement
Accuracy: $\pm 3\%$
Reference Conditions: 23°C
Overall Length: 14" (35.5 cm)

Simpson Illumination Level meter

MODEL 408-2

- Compact, portable unit
- Four ranges provided
- Universal matching to the response of the eye without additional filter
- Carrying case supplied
- Makes luminance measurements using accessory tube
- Can be used as exposure meter
- Operates in any position
- Lightweight

SPECIFICATIONS

Ranges:

0-15/50/500 foot candles; 0-1500/5000/15000/50000 foot candles using slip-on X100 extension filter

Accuracy: $\pm 5\%$, $\pm 8\%$ with X100 filter, $\pm 9\%$ with luminance tube

Movement: Core magnet moving coil, unaffected by stray fields

Light Sensitive Element: 1.77" dia. selenium photocell corrected to eye response

Spectral Sensitivity: Matched to wavelength curve

Cosine Correction: Up to an 85° angle of incidence with built-in correction lens

Luminance Measurement: (Using slip-on X2 tube): **Ranges:** 0 to 30/100/300/1000 cd/ft²

Aperture of Tube: 1.52" dia.

Diameter of Test Area: 1.7 X distance

Exposure Meter Table: (For incident light measurements from 0.5 up to 7400 foot candles): Light values for 50 ASA, 0-14 EV at f8, 60 sec down to 1/250 sec (table is on back of instrument)

Scale: Longest scale arc: 3.125" (78mm). Shortest scale arc: 2.25" (56 mm)

Case: High-impact plastic

Dimensions: 3.62 x 4.96 x 1.77" (92 x 126 x 45 mm)

Weight: Less than 1 lb.



MODEL 408-2 ILLUMINATION LEVEL METER, complete with remote sensor, X100 range extension filter, luminance measurement tube, carrying case and instruction manual, Catalog No. 12632

\$350.00

EXTRA ATTACHE CASE,

Cat. No. 00819

32.00



Simpson Photo Tachometer

MODEL 410

- Contactless measurement
- Battery operated
- Four ranges provided
- Measures speeds up to 50,000 RPM
- Lightweight, easy to use

SPECIFICATIONS

Case: High-impact, custom molded

Accuracy: $\pm 2\%$ F.S.

Movement: Core magnet movement with spring-loaded pivot suspension

Ranges: 1500-5000-15,000-50,000 RPM

Input Resistance: ≥ 10 k Ω

Operating Temperature: 0—40°C

Sensitivity of Pick-up Head: From 0.2" to 2": (.5 to 5 cm) with light marking on dark background or reverse (marking provided, for example, by self-adhesive tape, chalk, paint).

From 2" to 12": (.5 to 30 cm) with reflective marking on non-reflective background or reverse (example: silver, fluorescent red, mirror paint or tape)

Supply Voltage: Indicating Instrument: One 9 V battery

Pick-up Head: Two 1.5 V batteries

Working Position: Horizontal

Dimensions: Indicating Instrument: 3.6" x 5.98" x 1.8" (92 x 152 x 45 mm)

Pick-up Head: 1.42" x 8.0" x 1.9" (36 x 205 x 48 mm)

Weight: Indicating Instrument: Approx. .9 lb. (.4 kg)

Pick-up Head: Approximately .7 lb. (.3 kg)



MODEL 410 PHOTO TACHOMETER, complete with batteries, accessories, vinyl carrying case and instruction manual, No. 12604

\$360.00

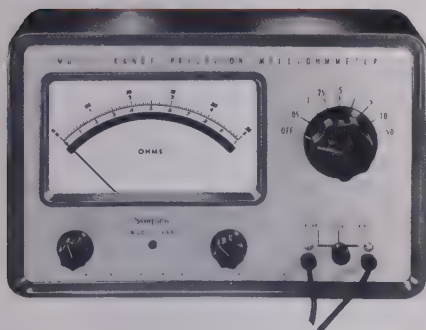
EXTRA CARRYING CASE,

Cat. No. 00811

36.75



Simpson Secondary Standards



MODEL 1699, with batteries, leads, manual, Catalog No. 13299... **\$450.00**
SPARE KELVIN LEAD, Catalog No. 00156... **23.35**

MODEL 1699 MULTI-RANGE PRECISION MILLIOHMMETER

Measures low-resistance values accurately, rapidly, by comparing them to known standard internal resistances. Accuracy is $\pm 1\%$ F.S. even on the 0-0.05 Ω range. No warm-up is needed.

SPECIFICATIONS

Resistance Ranges, Ohms:	0.05	0.1	0.25	0.5	1.0	5.0	10.0	50.0
Max. Current, mA:	460	231	97	47	26.5	5.0	2.7	0.5
Max. Power Dissipation, mW:	7.95	5.16	2.15	1.10	0.694	0.121	0.069	0.012

Sensitivity: 0.001 Ω , smallest scale division

Readout: 7" single arc 90° 100-division mirror scale knife-edge pointer

Power: 2 batteries supplied: one NEDA #11, one NEDA #1604

Transistors: Two, matched pair, 2N2716

Leads: Wired-in Kelvin type clip, supplied

Size: 11-3/8 x 7-3/8 x 3-1/4"

Weight: 5 lbs. 10 oz.



Simpson Multi-Range Chart Recorders

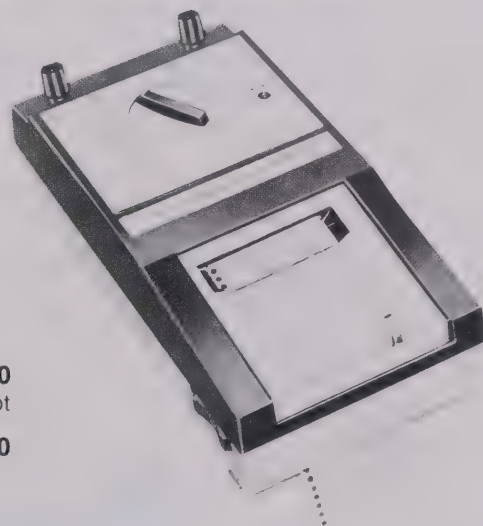
MODEL 605-2 MULTIcorder®

- 27 switch-selectable ranges
- Permanent, inkless recording of both range and measured value
- 3 built-in chart speeds
- Rugged, high torque taut-band movement for extremely accurate recording and readout

RANGES

DC Volts: 0-3, 15, 60, 300, 600
DC Millivolts: 0-12, 30, 60
DC Milliamperes: 0-1.5, 3, 6, 30, 150
DC Microamperes: 0-600
DC Amperes: 0-1.2, 6
AC Volts: 0-6, 30, 150, 300, 600
AC Milliamperes: 0-3, 15, 60, 300
AC Amperes: 0-1.2, 6
Sensitivity: DC or AC volts, 660 Ω/V

MODEL 605-2, complete with test leads, 2 rolls of chart paper and instructions for 120 V AC operation, Cat. No. 12613... **\$575.00**
MODEL 605-2, same as above, except battery operation, Cat. No. 12614... **725.00**



SPECIFICATIONS

	605-2
Recording accuracy	$\pm 2.5\%$ F.S.
Indication accuracy	$\pm 1.5\%$ F.S.
Chart speeds	1, 3, 12 in./hr.; 25, 76, 305 mm/hr.
Impression rate	1 or 2 sec selectable
Chart drive: synchr.	120 V AC, 60 Hz (DC motor on battery model)
Size	10.625" x 5" x 3.75"
Weight	5-1/2 lbs.

CHART PAPER*

Division Calibration	Box Qty.	Catalog Number	Price per Box
50, for 604	10 rolls	02612	\$45.60
30, for 605		02614	45.60

*Pressure-sensitive, 2.6" wide, 50' long for Models 604, 605

ACCESSORIES

Description	For Model	Cat. No.	Price
Test leads	604,605	07500	\$ 7.25
Carrying case, vinyl	604,605	02616	59.45
Gear unit, 30/60/90 in./hr.	604,605	22307	97.85
Shunt, 20, 10, 5 DC amps	604 only	06526	68.05
Shunt, 0-100 DC amps	604	06531	93.15
Shunt, 0-12, 30, 60 DC amps	605		
Shunt, 0-120, 300, 600 DC amps	605 only	06529	152.00
Current transformer*, 0-30, 120, 600 AC amps ($\pm 3\%$, 45-65 Hz)	605 only	02461	95.15
($\pm 1\%$ 45-65 Hz)	605 only	02462	170.90
Current transformer*, 0-30, 120, 600, 1200 AC amps ($\pm 3\%$, 45-65 Hz)	605 only	02463	259.85
Thermocouple probes:			
Surface type	605 only	22923	112.55
Immersion type		22924	112.55

*Clamp-on type

Simpson Miniature Strip Chart Recorders

Model 2750-2 Single Channel Recorder

Model 2750-2. Rugged pivot and jewel meter movement for superior shock/vibration capability. Provides 1.5% recording accuracy. 3 chart speeds—60 mm (2.36"), 20 mm (.79") and 10 mm (.39") per hour. Impression rates are 2-6-12 seconds. Fit standard DIN/IEC panel. Specially formulated pressure sensitive chart paper produces clean, clear trace—does not smudge, fog or blur with age. You get up to 1600 hours' recording time per roll of chart paper. The 2750-2 can be connected for either 120 or 240 volt operation and has standard quick-connect rear terminals.

Catalog numbers shown in Black are standard. Numbers in Orange are special order ranges.

Ranges	Res. Ohms	Catalog Number	Price	Ranges	Sens.	Catalog Number	Price
0-10 μ A DC	5 k	22130**	\$296.00	0-10 V DC	2000 Ω /V	22137	\$265.00
0-50 μ A DC	1 k	22131**		0-50 V DC		22138	
0-100 μ A DC	0.5 k	22132**		0-100 V DC		22139	
0-500 μ A DC	400	22133	265.00	0-250 V DC	2000 Ω /V	22140	275.00
0-1 mA DC	200	22134		0-5 A AC*		22141	
0-5 mA DC	10	22122		0-10 V AC		22126	
0-10 mA DC	5	22123		0-25 V AC		22127	
0-1 A DC	.05	22124		0-50 V AC		22128	
0-50 mV DC†	500 Ω /V	22135	265.00	0-150 V AC	approx.	22142	
0-1 V DC	2000 Ω /V	22136		0-250 V AC		22129	
0-5 V DC	2000 Ω /V	22125		100-130 V AC		22143**	296.00

New DC Operated Units. Use two 9 V alkaline batteries in parallel or external 7 to 15 VDC supply.

0-1 DC mA	200	22161	\$325.00	0-10 DC V	2 K Ω /V	22168	\$325.00
0-50 DC mV	500 Ω /V	22165		0-5 AC A*	2 K Ω /V	22172	
0-1 DC V	2 K Ω /V	22166		0-150 AC V	2 K Ω /V	22175	

Adapter accessories available:

24 Volt, Cat. 22151	\$15.00
48 Volt, Cat. 22150	15.75

† Catalog No. 22135, 0-50 millivolt DC may be used with either portable shunts (from 1 ampere to 200 amperes) or switchboard shunts (from 100 amperes to 3000 amperes). All shunts are shown on page 26.

*This range is a basic 0-10 volt AC recorder, but is supplied with a 0-5 ampere scale already mounted. Requires a Model 186 current transformer (Catalog #01312), see page 26. Other current transformers for up to 50 amperes with 10 V AC output are also listed. (Matching range scale plates are available.)

†For ranges from 0-50 amperes to 0-1000 amperes, order #22141 recorder, plus #01312 transformer, plus appropriate donut transformer from listing on page 26. (Matching range scale plates are available.)

**These units have case extender at rear. Size is same as 2760-2 on opposite page.

SPECIFICATIONS

Recording Accuracy: $\pm 1.5\%$ of full span

Meter Movement: Rugged pivot and jewel

Response Time: <2 seconds

Recording Trace: Single channel, 1 impression every 2, 6 or 12 seconds

Chart Paper: Pressure sensitive

Length: 16 meters (52 ft.). Up to 1600 hours' recording

Width: 70 mm (2.76")

Recording Width: 55 mm (2.16")

Markings: 50 divisions standard

Chart Gear Speeds: 60 mm/hour (2.36") is standard. Cams for 10 mm (.39") and 20 mm/hour (.79") are supplied

Rated Circuit-to-Ground Voltage of the Measuring Circuit:

250 VAC RMS (sinewave) (350 V peak)

Take-up Reel: Built-in, automatic, motor driven

Operating Temperature: -0°C to +40°C

Reference Conditions: Temperature: +23°C $\pm 1^\circ$ C

Relative Humidity: 30 to 60%

Power Requirement: 120/240 V $\pm 10\%$, 60 Hz, 1.6/3.2 V A (50 Hz available on special order)

Meter/Recorder Scale: 60 mm (2.36"). 50 divisions standard

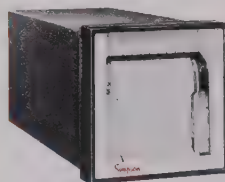
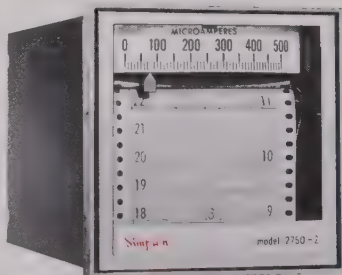
Dimensions: see outline drawings on next page

Front Panel: 96 x 96 mm (3.78 x 3.78") DIN standard

Projection (rear panel): 180 mm (7.09")

Terminals: Standard quick-connects 6.35 mm (.250") x .8 mm (.032")

Net Weight: 1.3 kg (2.9 lbs.)



Model 2755 10 Channel Event Recorder

Durable, rugged electromechanical instruments for inkless, continuous recording the on/off status (rather than magnitude) of ten separate sources. Inkless, pressure-sensitive chart paper continuously passes the ten recording pens. It is possible to determine from the chart the actual time an event occurred, the duration of time the event lasted and the sequence of events recorded on several channels. Up to 32 days' recording can be made at the 20 mm-per-hour chart speed. Quick selection of two built-in chart speeds, 20/120 mm-per-hour, is provided by slide switch. Interchangeable gearboxes permit speeds to 600/3600 mm-per-hour.

Supplied complete with chart paper, panel mounting bracket, 60' three-wire line cord and operator's manual.

SPECIFICATIONS

Accuracy: 10 millisecond (nominal) pen response

Chart Speeds: (switch selectable) 20/120 mm-per-hour (0.79/4.72 inches-per-hour)

Impression Rate: Continuous

Chart Paper: Pressure-sensitive, 2.6" wide, 50' long

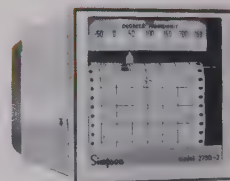
Take-up Reel: Built in. Automatic, motor driven

Motor Drive: Synchronous, 120 V AC $\pm 10\%$, 60 Hz.

Size: 3.78" x 3.78" x 9.38" **Weight:** 4 lbs. approx.

Input	Power per Solenoid	Cat. No.	Price
10 channels, 6 V DC	1.2 watts	22203	\$675.00
10 channels, 12 V DC		22202	
10 channels, 24 V DC		22201	
10 channels, 115 V AC	2.2 VA	22200	
10 channels, 24 V AC		22204	

Model 2760-2 Single-Range Temperature Recorder



These rugged units record for over a month unattended. Inkless, pressure-sensitive paper. Chart speeds are 10, 20 or 60 mm/hr. Accuracy is $\pm 1.5\%$ fs.

Amplifier input on thermocouple ranges allows 0 to 100 ohms of lead resistance without adjustment.

Ranges	Thermocouple Types**	Cat. No.	Price
-50 to +250°F	J	23065	\$395.00
0 to +300°F	J	23066	
0 to +500°F	J	23057	
0 to +800°F	J	23058	
0 to +1500°F	K	23059	
0 to +2500°F	K	23067	

**Thermocouple not supplied. See offering this page.

Type J — Iron Constantan (I/C)

Type K — Chromel Alumel (C/A)

Model 2761 Single Channel, 3-Range Temperature Recorder

Model 2761. Single channel, 3-range temperature recorder. Range coverage is from -50°F to $+250^{\circ}\text{F}$ in 100° spans. The recorder is supplied with individual phono jacks for 3 separate temperature sensors. Inputs and ranges are selected by means of two rear panel 3-position switches. This added capability permits monitoring and recording three separate temperature locations without relocating the sensor.

Although the 2761 provides broad range coverage, the individual ranges allow temperature resolution to 1°F at accuracies of $\pm 3^{\circ}$ maximum. The 2761 is supplied with an AC synchronous motor for 115 V, 60 Hz operation. Standard chart speed is 20/120 mm/hr. with a clamp rate of once every 6 seconds. The scale and chart paper are graduated directly in degrees Fahrenheit for all ranges, which allows fast, accurate readings without interpolation.

MODEL 2761, -50° to $+50^{\circ}\text{F}$; $+50^{\circ}$ to $+150^{\circ}\text{F}$; $+150^{\circ}$ to $+250^{\circ}\text{F}$ (3 ranges, switch selectable), complete with chart paper, panel mounting bracket, 60" 3-wire line cord, 1 #00010 temperature sensor and operator's manual.
Catalog No. 23151..... **\$425.00**

SPECIFICATIONS

Recording:

Dot Impressions on Chart Paper:

Every 6 seconds

Chart Paper Width: 2.56"

Recording Width: 2.32"

Length of Paper on Roll: 50'

Chart Speed: 20 or 120 mm/hr.

Time Imprint: 1-24

Linear Divisions: 50

Running Time at Standard Chart Speed: 32 days

Meter Movement:

Taut Band Suspension Response Time: 2 sec.

Sensitivity: $8.4\ \mu\text{A}$

Resistance: 1780 ohms

Temperature Measuring: 3 Ranges, switch selectable: -50° to $+50^{\circ}\text{F}$; $+50^{\circ}$ to $+150^{\circ}\text{F}$; $+150^{\circ}$ to $+250^{\circ}\text{F}$

Accuracy Recording: $\pm 3^{\circ}\text{F}$

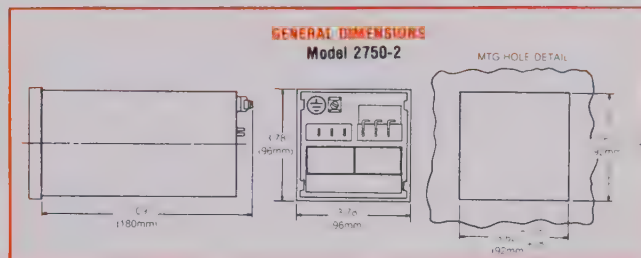
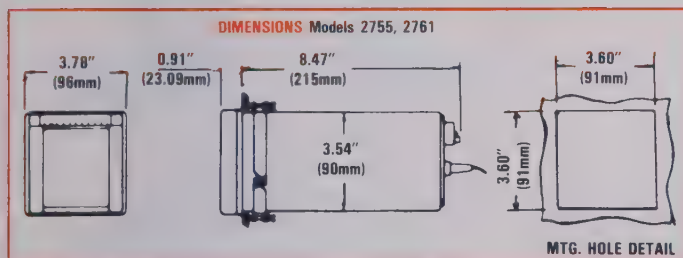
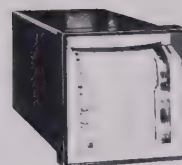
Sensing: 3 probes, switch selectable thermistor type

Power Input: 105 to 135 V AC

Frequency: 60 Hz

Power Consumption: 2 VA

Weight: 4-1/2 lbs.



ACCESSORIES For Various Models

Item	Cat. No.	Price
Portable carrying handle (2750, 2755, 2760, 2761)	22392	\$40.75
Plastic window for direct paper feedout (2761)	22395	9.75
Line cord, 3 wire, 60", w/pigtail terminal (2755, 2761)	22394	8.55
Line cord, 3 wire, 60", w/117 V AC ground plug (2755, 2761)	22393	9.45
Gear unit for 20/120 mm/hr. speeds (2755, 2761)	22300	37.65
Gear unit for 30/180 mm/hr. speeds (2755, 2761)	22301	55.05
Gear unit for 60/360 mm/hr. speeds (2755, 2761)	22302	55.05
Gear unit for 100/600 mm/hr. speeds (2755, 2761)	22303	55.05
Gear unit for 300/1800 mm/hr. speeds (2755)	22304	83.85
Gear unit for 600/3600 mm/hr. speeds (2755)	22305	83.85

TEMPERATURE SENSORS

Description	Cat. No.	Price
Free air temp. probe (for 2761, 2762)	00789	\$28.25
Surface temp. probe (for 2761, 2762)	00790	22.50
15' Lead and thermistor (for 2761, 2762)	00010	25.00
30' Lead and thermistor (for 2761, 2762)	00216	25.00
50' Lead and thermistor (for 2761, 2762)	00415	26.75
100' Lead and thermistor (for 2761, 2762)	00416	32.50
150' Lead and thermistor (for 2761, 2762)	00417	40.75
I/C Thermocouple, 10 Ω Stainless, 0.187" X 5.0", 10' leads (for 2760, 2760-2)	23245	38.60
I/C Thermocouple, 10 Ω Stainless overbraid, 235", 20 ga. (for 2760, 2760-2)	21224	59.40
I/C Thermocouple, 10 Ω Glass cloth overbraid, 34", 30 ga. (for 2760, 2760-2)	21223	10.15
I/C Thermocouple, 10 Ω Glass cloth overbraid, 137", 24 ga. (for 2760, 2760-2)	21222	12.10
C/A Thermocouple, 10 Ω Stainless, 0.187 X 5.0", 10' leads (for 2760, 2760-2)	23246	38.60

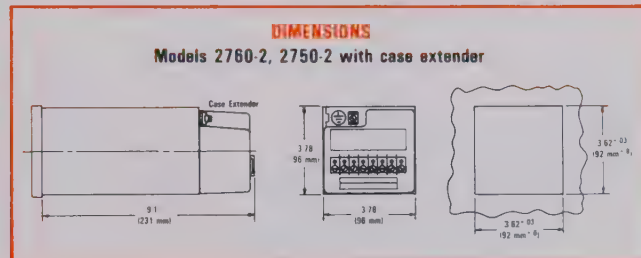


CHART PAPER

For Models 2750-2, 2755, 2760-2, 2761,

For Series	Calibration		Cat. No.	Price/10 Roll Box
	Speed	Division		
2750-2	—	30 div.	22156	\$37.37
		50 div.	22155	
2755	20 mm/hr.	—	22380	38.55
	30 mm/hr.	—	22381	
	60 mm/hr.	—	22382	
	100 mm/hr.	—	22383	
2761	20 mm/hr.	—	23237	38.55
	30 mm/hr.	—	23238	

CALL YOUR DISTRIBUTOR FOR 2750, 2760 CHART PAPERS

For Series	Thermocouple Type	Temperature Range	Cat. No.	Price/10 Roll Box
2760-2	J (I/C)	-50° to $+250^{\circ}\text{F}$	23261	\$38.55
	J (I/C)	0° to $+300^{\circ}\text{F}$	23262	
	J (I/C)	0° to $+500^{\circ}\text{F}$	23263	
	J (I/C)	0° to $+800^{\circ}\text{F}$	23264	
	K (C/A)	0° to $+1500^{\circ}\text{F}$	23265	
	K (C/A)	0° to $+2500^{\circ}\text{F}$	23266	

CONTACT LOCAL DISTRIBUTOR FOR PREVIOUS MODELS' CHART PAPER

Simpson Test Equipment Accessories



AMP-CLAMP® ADAPTERS for AC ampere measurements

For Analog VOMs

MODEL 150-2 Adapter. Clamp-on AC ammeter adapter for analog VOMs having 0-2.5 or 0-3 V AC range. Ranges: 0-5, 10, 25, 50, 100, 250 amps. Readout is on VOM's 0-2.5 V AC scale. When used with 0-3 V AC, ranges are 0-6, 0-12, 0-30, 0-60, 0-120, and 0-300 AC. With leads and operator's manual. Accuracy: $\pm 3\%$ fs

FOR 260 SERIES 7 and other VOMs with reverse insulated input terminals, Catalog No. 00545 \$51.00

FOR 260 SERIES 6 and other VOMs with banana jack input terminals, Catalog No. 00541 51.00

For Digital VOMs

MODELS 153-2 AND 154-2. Plug into digital multimeter. Readout is on 0.2 V, 2 V or 20 V AC VOM scale. Ranges: 2 A, 20 A or 200 A rms. With leads and manual. Accuracy (% of full range): $\pm 3\%$ 20 and 200 A range, $\pm 4\%$ 2 A range.

MODEL 153-2 for Simpson DMMs and others with reverse insulated input terminals, Catalog No. 12494 \$51.00

MODEL 154-2 for Simpson DMMs and others with banana jack input terminals, Catalog No. 12495 51.00

AMP-CLAMP ACCESSORIES

CARRYING CASE, Catalog No. 00548 16.50

EXTRA TEST LEAD for Model 154, Catalog No. 00533 5.00

MODEL 151-2 LINE SPLITTER (see pg. 34), Catalog No. 00544 15.00

ADAPTER TEST CORD. Adapts 00541 and 12495 to fit reverse jack inputs, Catalog No. 00529 \$6.30

CLIP-ON VOLTAGE PROBE, Catalog No. 02229 4.75



Model 153-2

UL
Recognized



Model 154-2

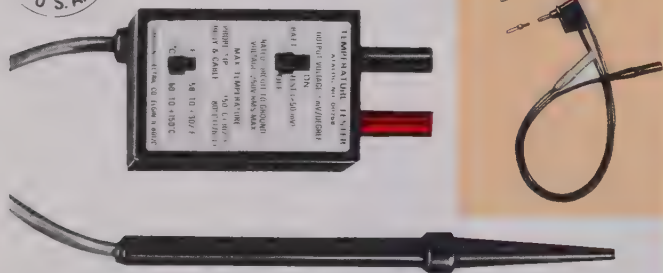


Model 150-2



Temperature Probe Tester-Adapters

Adapt Your Digital or Analog VOM to Direct Temperature Reading— Millivolt range scale reads degrees (-25.1 mV equals -25.1°)



Solid-State Temperature Probe Adapter

Two switch selectable ranges: -50° to $+150^\circ\text{C}$ and -58° to $+302^\circ\text{F}$. Insulated probe lets you measure temperature in "live" circuits. 750-hour battery with test feature. With 9 V battery, adapters for banana jack input or Simpson insulated female inputs, Cat. No. 00758 \$115.75

REPLACEMENT LEAD ADAPTER SET, Cat. No. 00054 ... 8.75

SPECIFICATIONS

Ranges: -50° to $+150^\circ\text{C}$, -58° to $+302^\circ\text{F}$

Power: 9 V alkaline battery (NEDA 1604A or equiv.)

Output: One mV DC per degree C or F (5000 Ω min.)

Accuracy: ($+15^\circ\text{C}$ to $+35^\circ\text{C}$ ambient) $\pm 2^\circ\text{C}$ (probe tip temp.), 0° to 100°C , derated linearly to $+4^\circ$ at -50°C and $+150^\circ\text{C}$

Response: 1.5 sec to within 2° (50°C step)

Maximum Rated Circuit-to-Ground Voltage: 350 V peak from probe tip to circuit common or earth ground



NEW Thermocouple Temperature Adapter

Two switch selectable ranges: -30°F to $+1000^\circ\text{F}$, or -34°C to $+537^\circ\text{C}$. Dual switchable inputs for 2 plug-in thermocouples (one supplied). 100-hour continuous battery operating life. Battery test built in. With one thermocouple, battery, reverse insulated jacks and banana jack adapters.

Catalog No. 00760 \$103.00

ACCESSORY THERMOCOUPLE LEAD. Type K, Chromel/Alumel (C/A). With 6 ft. lead and standard male plug, Catalog No. 00171 17.75

SPECIFICATIONS

Ranges: -30°F to $+1000^\circ\text{F}$, -34°C to $+537^\circ\text{C}$

Power: 9 V alkaline battery (NEDA 1604A or equiv.)

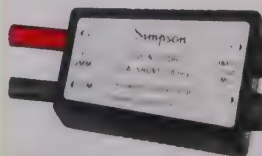
Output: one mV DC per degree C or F

Accuracy: $\pm 5^\circ\text{F}$ or $\pm 3^\circ\text{C}$

Rated Circuit-to-Ground Voltage: 30 V AC, 60 V DC max.

Size: 1.44 x 3.35 x 2.20"

Weight: 0.35 lb. (155 grams)



NEW! 10-Amp AC/DC Shunt

For Models 461-2 & 2R, 462, 463, 467, 467E and similar DMMs with reverse jacks. Lets you measure up to 10 amperes continuous (20 amperes intermittent) AC or DC, Catalog No. 00801 \$26.25

Simpson Test Equipment Accessories

Test Equipment Accessories NEW DELUXE 23-PIECE UNIVERSAL TEST LEAD SYSTEM

Everything you need for fast, convenient test setups, measurements, troubleshooting. Can be used with all Simpson (and other) VOMs or DMMs with standard or reverse type banana jack inputs. (All individual components are also available separately under catalog numbers and prices shown below.)

COMPLETE 23-PIECE SYSTEM, Cat. No. 00818 **\$57.00**

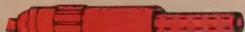
System includes:

- (A) TWO 48" TEST LEADS with "Safety Guard" insulated banana plugs, Cat. No. 00421 **2 for \$15.00**
- (B) TWO 48" TEST LEADS with "Safety Guard" insulated banana plugs at one end, elbow reverse jacks at other end, Cat. No. 00404 **2 for \$13.25**
- (C) TWO TEST LEAD EXTENDERS, Cat. No. 00427 **2 for \$2.50**
- (D) TWO REVERSE BANANA TO STANDARD BANANA JACK INSULATED ADAPTERS, Cat. No. 00426 **2 for \$2.75**
- (E) TWO PROBE TYPE TEST PRODS, Cat. No. 00422 **2 for \$6.00**
- (F) TWO 6" SPRING HOOK-ON PROBES, Cat. No. 00423 **2 for \$5.25**
- (G) TWO SLIP-ON INSULATED ALLIGATOR CLIPS, Cat. No. 00406 **2 for \$2.75**
- (G) SCREW-ON ALLIGATOR INSULATED CLIPS (not included with system), Cat. No. 00425 **2 for \$1.25**
- (H) TWO HIGH DENSITY PROBES, Cat. No. 00424 **2 for \$7.00**
- (I) TWO LARGE SPADE LUG ADAPTERS for screw terminal sizes #6 through 1/4", Cat. No. 00408 **2 for \$4.25**
- (J) TWO SMALL SPADE LUG ADAPTERS for screw terminal sizes #2 through #6, Cat. No. 00407 **2 for \$3.75**
- (K) TWO PHONE TIP PLUGS fit p.c. test jacks, Cat. No. 00409 **2 for \$4.25**
- (L) ONE DELUXE ROLL POUCH, Cat. No. 00405 **\$12.75**



With Special
"Safety Guard"
Insulated Banana Plugs

Before Connection



After Connection

NEW! STANDARD 14-PIECE UNIVERSAL TEST LEAD SYSTEM

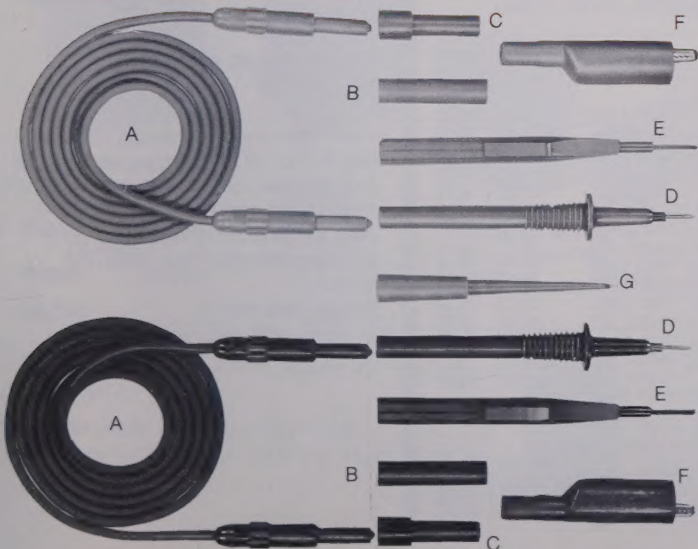
Contains the most often needed components for general purpose testing.

COMPLETE 14-PIECE SYSTEM, Cat. No. 05577 **\$32.50**

System includes:

- (A) TWO 48" TEST LEADS with "Safety Guard" insulated banana plugs, Cat. No. 00421 **2 for \$15.00**
- (B) TWO TEST LEAD EXTENDERS, Cat. No. 00427 **2 for \$2.50**
- (C) TWO REVERSE BANANA TO STANDARD BANANA JACK INSULATED ADAPTERS, Cat. No. 00426 **2 for \$2.75**
- (D) TWO PROBE-TYPE TEST PRODS for general purpose testing, Cat. No. 00422 **2 for \$6.00**
- (E) TWO 6" SPRING HOOK-ON PROBES for no-slip connections, Cat. No. 00423 **2 for \$5.25**
- (F) TWO INSULATED SCREW-ON ALLIGATOR CLIPS, Cat. No. 00425 **2 for \$1.25**
- (G) ONE HIGH DENSITY PROBE for testing in high density circuits, Cat. No. 00424 **2 for \$7.00**

One vinyl pouch holds all components of the system.



Simpson Test Equipment Accessories



See Page 49 for our Standard and Deluxe Test Lead Sets

TEST LEADS, PROBES, CABLES *UL RECOGNIZED

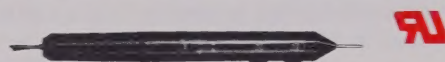


#00125

#00043

#07500

Cat. No. 00118
Retractable Grip-Tip Lead Probe Adapter,
6-13/16" long, for use with 00125 and 00043



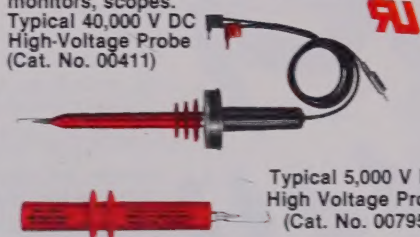
Low-Power Ohms Probe for 250, 255, 260, 261
and 270 (Cat. No. 00735)

TEST LEADS, PROBES, CABLES *UL RECOGNIZED

For Model	Description	Cat. No.	Price
160	Probe-tip leads	02055	\$ 7.00
	Alligator-clip leads	01927	6.75
202, 208, 209, 229-2, 250, 255, 260 Series 3-6 only, 260-XL, 261, 262 Series 3 only, 263, 265, 267, 268, 269 Series 2 & 3 only, 270-1 to 4, 360, 460, 464, 465	Combination probe-tip and removable alligator-clip leads	00125*	9.50
	Probe-tip leads	07538	8.25
	Alligator-clip leads	07500	7.25
	Retractable grip-tip probe adapters for use with 00125, 00043 leads	00118	9.00
230, 240, 260 Series 1 & 2 only, 372, 379	Probe-tip leads	08381	8.25
	Alligator-clip leads	08375	6.75
250, 255, 260, 261	Low-power ohms probe	00735	53.75
256, 257	Combination probe-tip and removable alligator-clip leads	07541	9.00
260-7, 270-5	Low-power ohms probe	00414*	53.75
260 Series 7, 270-5	Leads/Clips	00043*	9.50
262 Series 1 & 2 only, 269 Series 1 only	Combination probe-tip and removable alligator-clip leads	08463	6.50
295, 296 Series 1	Clip-on probe	02227	5.00
295-2, 296-2	Clip-on probe	02229	5.00
295, 296, All	Extra leads	00041	5.75
303 Series 1 only, 651 (DC probe only—uses same grd. lead as 303-2)	DC Probe-tip lead	00067	12.25
	AC Probe-tip lead	00068	12.25
	Grd. lead (303-1 only)	00069	6.50
303 Series 3 only	AC/DC probe-tip lead (303-2, 312 only)	00150	26.25
311	AC/DC probe-tip lead	00175	26.00
313	AD/DC probe and grd.-clip lead	00189	25.25
314	X1/X10 AC/DC Probe and grd.-clip lead	00194	57.75
355	Probe-tip leads	08600	7.25
360-3, 460-5, 461, 461-2, 461-2R, 462, 463, 464-3, 467, 467E, 467 dB, 470, 474	Combination probe tip and removable alligator clip leads	00043*	9.50
362, 371, 373, 374, 375, 376, 377, 378, 387	Probe-tip leads	08379	8.25
	Alligator-clip leads	08376	6.75
383A	Test lead assembly	07509	6.75
390	Break-in cord assembly	07544	16.50
390-2	Test lead set,	07543	17.25
	Break-in cord assembly	08418	16.50
455T, 452, 454	Shielded input cable	07549	12.00
459	X1/X10 probe and cable assembly	00791	46.25
466, 715	Shielded input cable	00100	10.50
604, 605	Test lead	07500	7.25
650	Test lead	07545	4.50

HIGH-VOLTAGE PROBES

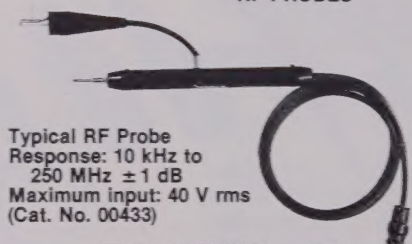
For low-power high-voltage, high impedance circuits such as TV, video monitors, scopes.
Typical 40,000 V DC High-Voltage Probe (Cat. No. 00411)



Typical 5,000 V DC High Voltage Probe (Cat. No. 00795)

For Model	Description	Cat. No.	Price
260 Series 2	40,000 V DC	00033	\$42.00
250, 255, 260 Series 3, 4, 4M, 5, 5M, 5P, 6, 6M, 6P, 6XL, 6XLP, 261, 261 Series 2, 270, 270 Series 2, 3 and 4	10,000 V DC 10,000 V AC 40,000 V DC	00034 00036 00168	42.00
250, 255, 260-6, 260-6M, 260-6P, 6XL, 6XLP, 270-4	5,000 V DC 5,000 V AC	00795 00794	14.50
260-7	5,000 V DC 5,000 V AC 10,000 V DC* 10,000 V AC* 40,000 V DC*	00795 00794 00412 00413 00411	14.50 14.50 42.00 42.00 42.00
262 Series 3	4,000 V DC 40,000 V DC	00796 00121	12.50 42.00
265	40,000 V DC	00168	42.00
269 Series 2 and 3	4,000 V DC 40,000 V DC	00797 00066	12.50 42.00
313 Series 2 and 3	40,000 V DC	00728	42.00
303-3XL, 360-2, 460-3, 460-4, 464, 465	40,000 V DC	00432	51.75
360-3, 460-5, 461, 462, 463, 464-3, 465-3, 467, 470, 474	40,000 V DC	00749	51.75

RF PROBES



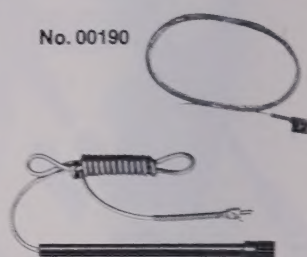
Typical RF Probe
Response: 10 kHz to
250 MHz ± 1 dB
Maximum input: 40 V rms
(Cat. No. 00433)

Typical DC/AC/Ohms Probe
(Cat. No. 00150, 00175, 07594)

For Model	Description	Cat. No.	Price
303 Series 1	DC probe AC probe High-Frequency (RF)	00067 00068 00073	\$12.25 12.25 26.25
303 Series 2	DC/AC/Ohms probe High-Frequency (RF)	00150 00073	26.25 26.25
303 Series 3	High-Frequency (RF)	00433	41.75
311 Series 1	DC/AC/Ohms probe High-Frequency (RF)	07594 00731	24.75 42.00
311 Series 2	DC/AC/Ohms probe High-Frequency (RF)	07594 00174	24.75 32.50
311 Series 3	DC/AC/Ohms probe High-Frequency (RF)	00175 00174	26.00 32.50
312	DC/AC/Ohms probe High-Frequency (RF)	00175 00152	26.00 26.25
313 Series 2, 3	DC/AC/Ohms probe High-Frequency (RF)	00189 00191	25.25 24.25
314	High-Frequency (RF) DC/AC/Ohms probe (X1, X10)	00193 00194	24.25 57.75
400, 401, 405-2	Probe and clip, red, insulated with banana connections	00737	4.75
460-3, 464, 465	High-Frequency (RF)	00433	41.75
461, 462, 463	High-Frequency (RF)	00748	41.75

TEMPERATURE TESTER LEADS AND PROBES

No. 00190



For Models 385-3L, 389-3L, 652

Cat. No.	Price
00789	\$28.25
00010	25.00
00216	25.00
00415	26.75
00416	32.50
00417	40.75
00790	22.50

Models 388, 388-3L, 255

Cat. No.	Price
00496	21.00
00190	21.00
00187	26.75
00163	14.75

DIRECT/10-to-1 PROBE



For Models 452, 454
455T and 459

Low-capacitance attenuator probe has X1/REF/X10 selector switch and shielded coax cable with ground clip and BNC connector. With IC, BNC, and insulating tip adapters, trimmer tool, carrying pouch.

Catalog No. 00791 \$46.25



Simpson Test Equipment Accessories

CARRYING CASES

150, 153, 154 Amp-Clamp Case	00548	\$16.50
160, 165 Low-Cost Vinyl Case	02935	10.75
160, 165 Vinyl Case	02225	22.50
160, 165 Vacuum-Formed Case	02929	37.00
160, 165 Strap Case	02936	19.25
250, 255, 260, 260XL, 261, 265, 270, 303XL Utility Vinyl Case	00549	40.75
High-Voltage Probe Case	00804	14.75
250, 260, 260XL, 261, 265, 270 Vinyl	01818	29.50
250, 260, 260XL, 261, 265, 270, 303XL Ever-Redy Vinyl Case	00805	36.00
250, 260, 260XL, 261, 265, 270, 303XL Deluxe Case	00812	36.00
Combination 260 and Adapter Vinyl Carrying Case	01871	36.00
262, 263, 267, 268, 269, 388-3L Ever-Redy Vinyl Case	05262	32.00
294, 295, 296 Case	02226	29.00
312, 313, 314 Sponge-Lined Case	01565	40.00
312, 313, 314 Vinyl Case	00577	34.75
360 Carrying Case	00815	40.00
360-2 Carrying Case	00816	41.75
380 Microwave Tester Case	00782	36.00
385-3L Ever-Redy Vinyl Case	08073	24.75
All Micro-Testers—Ever-Redy Vinyl Case (except Model 392)	04299	22.50
All Micro-Testers—Leatherette Covered Case (including Model 392)	00831	19.75
Roll-Top Safety Case for 260-2, Models 9, 10, 880's	06192	24.75
Roll-Top Case for 260-6, 7 Family and 270-4, 5	00248	27.90
Roll-Top Case for 260-3, 4, 5 Family, 250, 255, 261, 265, 270	00249	27.90
400 Vinyl Case	01615	29.75
400-2 Vinyl Case	01612	29.75
401, 405, 405-2 Vinyl Case	01616	33.25
408 Attache Case	00809	32.00
408-2 Attache Case	00819	32.00
410 Attache Case	00811	36.75
431 Case	00817	12.00
461-2 Case	00814	28.25
461, 462, 710 Case	00747	31.00
460-3, 464 Series, 465 Series Case	01617	42.25
463, 467E, 467 Case	00813	26.75
470 Deluxe Strap Case	00821	27.00
470 Vinyl Pouch Case	00822	15.00
884 or 886 with 890 Package Case	00217	59.50

Carrying Case for 150
#00548 . . . \$16.50



Low-Cost Vinyl Case
for 160, 165
#02935 . . . \$10.75



Vacuum-Formed
Carrying Case for 160, 165
#02929 . . . \$37.00



Vinyl Case for 250,
255, 260, 260XL,
261, 265, 270
and 303 XL
#01818 . . . \$29.50



Ever-Redy Carrying
Case for 250, 255,
260, 260XL, 261,
270 and 303XL
#00805 . . . \$36.00



Deluxe Case for 260
Family, 260-6XL, 270-5
#00812 . . . \$36.00
For 360-2
#00816 . . . \$41.75



Ever-Redy Carrying
Case for 262, 263,
267, 268, 269, 338-3L
and 389-3L
#05262 . . . \$32.00



Vinyl Case for
313 and 314
#00577 . . . \$34.75



Leather Case for
Micro-Testers
#04299 . . . \$22.50



Roll-Top Safety Case
For 260-6, 260-7 Family
and 270-4, 270-5
#00248 . . . \$27.90
For 260-5
#00249 . . . \$27.90



Carrying Case for 360
#00815 . . . \$40.00



Vinyl Pouch Case
for 470
#00822 . . . \$15.00



Vinyl Case for 461
and 710
#00747 . . . \$31.00



Deluxe Strap Case
for 470
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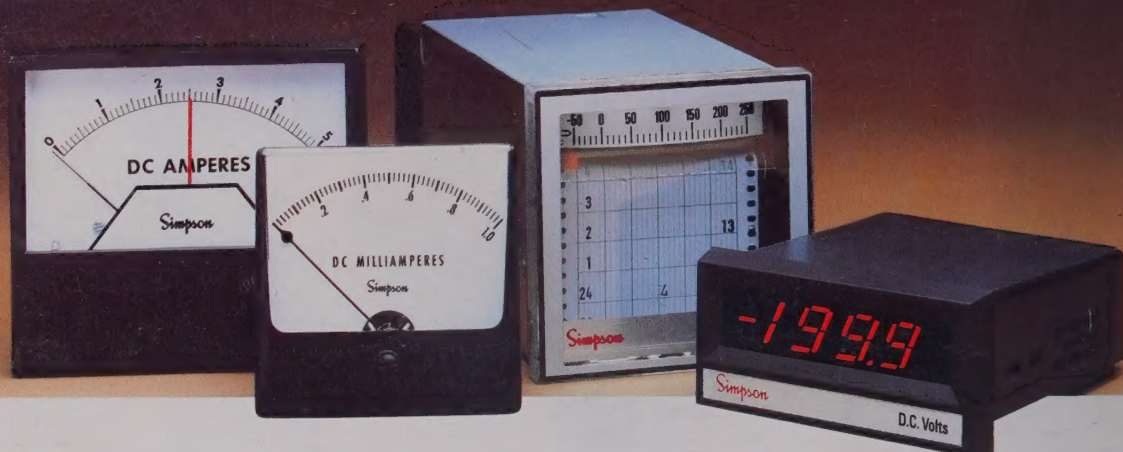
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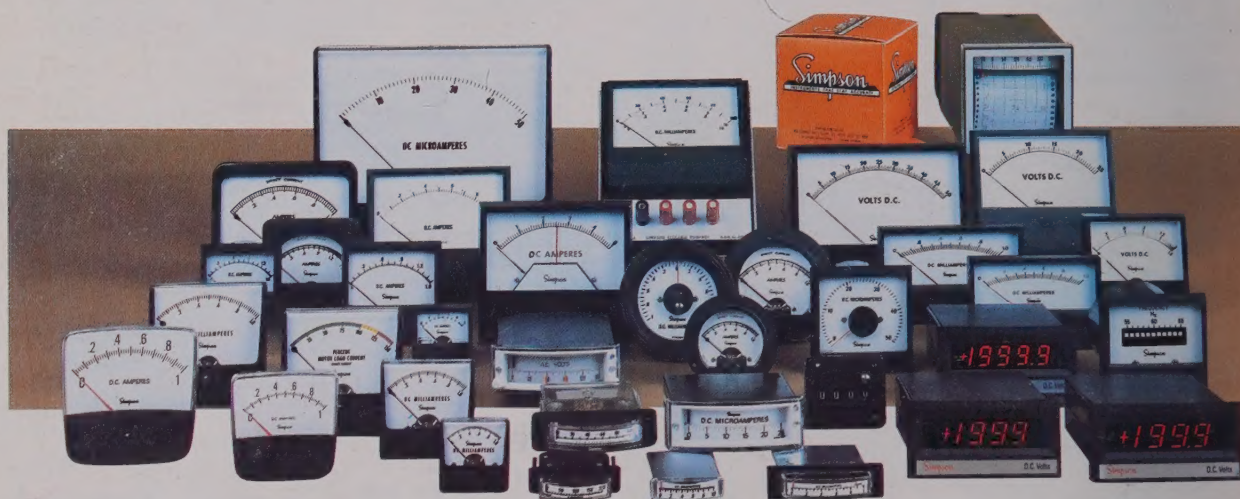




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